Amateur Radio

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July 2014
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WIRELESS INSTITUTE OF AUSTRALIA

Marc Hillman VK3OHM receives Chris Jones Award

- VK9MT Mellish Reef DXpedition
- Building a HF broadcast station
- DXer of the Year
- WIA Annual Conference

ISSN 0002-6859

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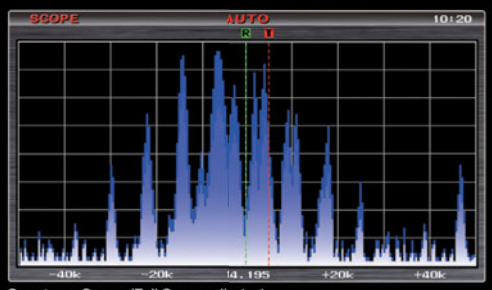

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This month's cover

This month's cover shows Marc Hillman VK3OHM receiving the Chris Jones Award from WIA President Phil Wait VK2ASD. Inset photo shows some of the Conference attendees listening to a briefing at the RACQ Careflight helicopter operations base. Photos by Robert Broomhead VK3DN.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

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Editorial

Peter Freeman VK3PF

Digital *Amateur Radio*

At its June meeting, the Publications Committee discussed some of the issues surrounding the introduction of a digital edition of *Amateur Radio*. Thanks to cooperation and good communications between those working at the coalface, it looks as if we will be able to produce a digital edition as of this issue.

We are still awaiting the detailed analysis of survey carried out in March and April, which may provide us with further guidance. The members of Publications Committee are particularly concerned that no members are disadvantaged as a result of the introduction of the digital edition.

Current plans indicate that the digital issue should be available by the first day of the month of the cover date of the magazine. It may be possible to achieve an earlier date for availability. It is likely that a News announcement will be made on the WIA website when the digital issue is available for download.

It is important that you register for Memnet – to download the digital edition, you will need to enter your Memnet login (or your callsign) and log in with your password. I tried the system this morning and it all worked smoothly. Current plans are for the file to be an Adobe Acrobat ® document, which will have a digital signature indicating that the file was downloaded by you, the member.

It is possible that many members will be reading this Editorial from the digital edition before their hard copy arrives.

Of course, please forward any comments back to the WIA or to the Publications Committee via *armag@wia.org.au*

Farewell to a friend

At the June meeting of the Publications Committee, Ernie Walls VK3FM announced that he was standing down from his role as Secretary of the Publications Committee.

Ernie has fulfilled this role for approximately nine years. His tasks often go without recognition to the broader amateur radio community. All input for the magazine – articles, regular columns, Club news items and Hamads – are processed by Ernie. He records all the articles, columns and Club news on an Article Register. He always undertakes an initial editing of the material before he sends it on to the next step for processing.

For all technical articles, the material will go to one of the technical editor team for checking of the technicalities. Artwork may need to go to long-serving draftsman and photo editor Bill Roper VK3BR for processing. Of course, there may need to be communication back to the author, another role undertaken by the Secretary. Occasionally, he may need to "crack the whip" with a technical editor to finish processing an article.

The articles will be collated by Ernie and then sent on to me as Editor. I will read through all material and hopefully find any errors that may have been missed. When I am happy with the article, it will be added to the collection of material ready for publication, and I will send Ernie an email indicating that the status should be recording as being at Production – another entry onto the Article Register for Ernie.

Continued on page 4

WIA comment

Phil Wait VK2ASD

Shifting Sands and Strategic Thinking

Thanks to Trent VK4TS and his wife Lorraine, Richard VK4RY and all the members of the Sunshine Coast Amateur Radio Club, the recent AGM, Open Forum and Conference weekend went without a hitch. Some 90 members attended; a special visitor was NZART Business Manager, Debbie Morgan ZL2TDM, under a long standing WIA/NZART custom to send representatives to each other's AGM, year about. The AGM, which is the formal part of proceedings, was brief. We announced the election results and thanked retiring Director Bob VK6POP for his service to the WIA and welcomed new Director, Rowan VK2ELF. Then we moved into the Open Forum, where members ask questions of the Board and express their views on any relevant issue. Next morning, the WIA's Board of Directors met to finalise the Institute's strategic direction for the coming year, taking into account the comments received at the Open Forum. So, what did the Board come up with, and why do we need a strategic direction, anyway? That's going to take a little explaining, so please bear with me.

The first major issue concerns the affiliated clubs. For many years, the WIA Board has been concerned about the general lack of interaction and information exchange between the WIA and its affiliated clubs. Apart from the club insurance scheme, the examination service provided by the WIA under a business arrangement with the ACMA, and the club grants scheme of previous years, there is not much the WIA does to encourage our affiliated clubs and, predictably, some of those clubs have low WIA membership percentages. It's a serious problem that needs to be addressed, as the affiliated club network is the grass-roots of amateur radio in Australia where much of the actual collective hobbyist activity takes place. The WIA is very serious about developing stronger linkages into our affiliated clubs in order to engender a two-way flow of information, ideas and activities and, let's face it – encourage stronger WIA membership – but we need your ideas. One suggestion is to appoint a number of regional club liaison officers, dividing the country into regions rather than States, while another is to ask each club to nominate a liaison officer who would keep in touch with the WIA and report to club meetings. We are very keen to hear how you think we can strengthen the linkages between the clubs and the WIA, without burdening everybody with an overly time-consuming and bureaucratic system.

The second issue is probably even more important, as the sand has started to shift beneath the entire Australian radiocommunications regulatory environment, the Department of Communications and the ACMA. You really need to bear with me on this one.

The Radiocommunications Licence Conditions (Amateur Licence) Determination 2013, (the LCD), specifies licence conditions for radio amateurs. These conditions include the type of communications permitted, with whom the operator is permitted to communicate, relevant transmission parameters and callsign usage, etc. – everything we can and can't do on the air. Another piece of Federal legislation, the Legislative Instruments Act 2003, requires the Amateur LCD to be renewed by October 2015, or it will automatically expire ("sunset"). *The Roman Empire had a similar requirement, where the power to collect special taxes and to activate troops was limited in time and extent, but Julius Caesar put an end to that following October 49 BC when he became Dictator for life.* The LCD renewal process presents us an opportunity, and the WIA is presenting a proposal to the ACMA in order to improve the Amateur Licence Conditions, and possibly simplify the regulations, to benefit radio amateurs in Australia. In my last President's Comment, I spoke about the importance of the Foundation licence to the future of amateur radio in Australia, and particularly the need to make amateur radio at all licence levels more attractive to new entrants, and more socially relevant. Although we don't know the shape of things to come, the upcoming remake of the LCD is an opportunity to do just that, possibly by introducing – among other things – digital mode access for Foundation licensees, wideband mode access for Standard licensees and greater flexibility for Advanced licensees to experiment with technological innovation. We are certainly raising a *raft* of issues for discussion.

In addition to the sunsetting of the LCD, the Federal Government has announced a total review of spectrum management in

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WIA news

APT prepares for WRC 2015 in Brisbane

Dale Hughes VK1DSH

As part of preparations for the next World Radiocommunication Conference which is scheduled for November 2015, many of the Asia-Pacific nations that make up ITU Region 3 met in Brisbane between June 9 and 13. The Asia-Pacific Telecommunity Conference Preparatory Group (usually abbreviated to APG) discussed many of the WRC-15 agenda items, including issues that will affect amateur operators.

The meeting in Brisbane is the third in a series of five meetings that are being held in the Asia-Pacific region and this meeting is sponsored by the Australian Communications and Media Authority with the assistance of the Australian Department of Communications. Several hundred delegates representing all areas of the radio communications industry and many national administrations attended the meeting. There are two main issues that are of interest to Australian amateurs: these being a proposed new secondary allocation for the amateur service around 5300 kHz and a proposed new primary allocation in the 77.5 to 78 GHz frequency band for the radiolocation service that may affect the existing primary amateur service allocation in that band.

Both of these issues are being extensively studied at ITU working party meetings in Geneva and the APG meeting will consider the regional aspects of these issues and formulate a regional view that will be presented at the World Radiocommunication Conference in 2015.

There are also a number of other WRC agenda items that may affect the amateur service, even though they are not specifically amateur issues. Information about all the agenda items can be found on the ITU website.

A number of delegates at the APG meeting were representing the interests of the amateur service, either as a member of their national delegation or as representatives of the International Amateur Radio Union. The amateur representatives took part in the agenda item discussions and presented information on the needs and purpose of the amateur service with respect to relevant WRC agenda items. This input also serves to maintain the profile of the amateur service in the regional communications administrations. It is vitally important that the amateur service continues to be seen as a valuable resource for the wider community and deserving of the radio spectrum we are permitted to use. Attendance at APG and ITU meetings is one aspect of showing the on-going commitment of the amateur service to the maintenance and expansion of our operating privileges.

As the meeting is in Brisbane, there was an opportunity for a limited number of interested local amateurs to meet the APG representatives.

Editorial

Continued from page 2

As if the above was not enough work to distract Ernie from family, golf and chasing DX, once a month he shares in the task of proof reading the final draft magazine before we send the files to the printer. We have three others proof reading, with the team of four sending their comments to me for collation and forwarding on to the publication house.

There are also the tasks of taking meeting Minutes and preparing each Agenda.

Combined, this is a large task for a volunteer. At times, he deals with the frustrations of material arriving just before a deadline, or even late.

Ernie has made my job as Editor much easier. I am happy to count Ernie as a friend and will be sorry to say farewell at the end of the September Publications Committee meeting – Ernie's last.

Many thanks, Ernie!

Needed: Secretary, Articles

As a result of Ernie's pending departure, the Publications Committee is now looking for a new Secretary. You can see the tasks required outlined above, and I am sure that Ernie will be able to guide a newcomer as to the details of all tasks required. Ideally, we need someone located within comfortable driving time of the WIA Office in Bayswater. A reliable internet connection is also required.

I think that we have one existing member of the Publications Committee considering taking the position. If that eventuates, we would still be keen for a new member to join the Committee.

The issue of proof reading has been solved, with *Callbook* Editor Peter VK3PH volunteering to add that role to his other tasks. Thanks Peter.

We also need articles for publication, both general and technical. Details on how to contribute can be found on the *AR magazine* page on the WIA website – look under "For Members".

Until next month,

Cheers,

Peter VK3PF

 Continued from page 3

Australia. This means that the Radiocommunications Act will be reviewed, and may change significantly, possibly moving away from the spectrum/apparatus/class licence system in place since the early 1990s, more towards a single technical "parameter-based" licence system that would allow much greater flexibility and adaptability in the use of spectrum.

Last year we had an insight into what the ACMA's and the industry's thinking might be: In opening Radcomms 2013, the Chair of the ACMA, Chris Chapman, highlighted the issue that *"regulation must be responsive to innovation"* and the fact of tension between interests in spectrum access where divergent views collided. To stay abreast of developments and the requirement of the ACMA *"being an evidence-informed regulator"*, he outlined two studies commissioned to contribute to the agency's future work: one being on forecasting likely future demand for spectrum, the other on the impacts of mobile broadband technologies on the Australian economy and society.

Rob Fitzpatrick from NICTA, Australia's Information Communications Technology (ICT) Research Centre of Excellence, pleaded the case for having *"sandpits"* of spectrum for researchers to *"play with"* as needed from time to time, while the Secretary of the Department of Communications, Drew Clarke, gave a talk in which he canvassed the idea of *"unchaining spectrum"* to engender innovation: *"what more can it do?"*, he asked, raising the spectre of spectrum demand for uses as yet unimagined.

Tellingly, he advocated the case for providing *"adequate* (spectrum) *for public interest uses"*. Several other speakers at Radcomms 2013 explored the issue of the *"value"* of spectrum – the economic or monetary value, the political value and the social value. The concept of spectrum having an *"imputed value"* was raised in one panel session, along with the concept of certain spectrum bands and uses having an intrinsic or *"intangible"* value as a social good – not everything could be reduced to monetary value.

So, it should be obvious from all that, that public benefit is becoming an increasingly important metric in spectrum decision-making, even though it's value is intangible, and that the WIA needs to be in the strongest possible position to argue the public benefit, or social good, of the amateur service. Indeed, amateur radio has a rich history of public benefit, largely through provision of organised emergency communications in times of natural or civil disaster, and that is still the case, although the emergency services in Australia are now well equipped with modern communications infrastructure and amateur radio is more likely to be of value in the first few hours of an emergency before other services have time to respond, or as a skilled manpower resource, or as a form of back-up communications resource if all else fails.

However, there is another area where I believe amateur radio can provide a great public benefit in today's society. Amateur radio already provides spectrum for public interest uses – albeit through a fairly rigorous set of entry criteria; since the very early years, amateur radio has exploited spectrum for experimentation, research and development. There are many examples from over the decades where amateurs have explored radio communications concepts that have been subsequently developed into successful commercial technologies – cellular telephony and PC wireless networking being telling examples. If the licensing conditions permitted, amateur radio could be used to a much greater degree by educational organisations for teaching and research purposes, the so-called *sand-pit* concept aired at Radcomms 2013, which gets me back around to digital mode privileges for Foundation licensees, which would be one thing necessary to attract any real interest from that quarter. The Minister for Communications, Malcolm Turnbull MP, has invited all stakeholders – the WIA included – to participate in the review of spectrum management, and the ACMA has asked for the WIA to comment on the renewal of the LCD. It's looking like a very busy couple of years at the WIA. Both items are strategically important for Australian amateur radio and for the WIA. Although very time consuming, we have a chance to put a case for some strategic changes designed to enhance the public benefit and societal relevance of amateur radio, and ensure its viable future in Australia.

PS: ...*Written reports to the Open Forum are submitted by the 10 WIA functional committees, and make very interesting reading about the health of amateur radio in Australia. They can still be downloaded from the WIA homepage.*

Contribute

Articles and high quality photographs for *Amateur Radio* and *Callbook*.

See *http://www.wia.org.au/members/armag/contributing/*

VK9MT - Mellish Reef 2014

Gene Spinelli K5GS

Mellish Reef location

Mellish Reef is an uninhabited coral atoll in the Coral Sea located approximately 1,150 kilometres north-northeast of Brisbane, Australia. The reef itself is approximately 10 km long by 3 km wide. However, the only useable land mass is 'Herald's Beacon', a small sand cay which stands two metres above the high water line.

The surface is composed of crushed coral and pumice stone to a depth of about 30 cm over a coral base. The reef is home to thousands of surface nesting seabirds including boobies and petrels with an active population of hermit crabs. Surrounding the island are submerged coral heads which make navigation hazardous. The beauty of the white sand against the blue water and submerged coral is stunning. The sun reflecting off the water and coral produces some of the most beautiful colours in the spectrum. The coral heads required our boat to anchor about 500 metres offshore and use a Zodiac to transit to and from the island, carefully navigating around the coral.

Figure 1: The Coral Sea.

Why Mellish Reef

The idea to activate Mellish Reef was born in June, 2013 while Pista HA5AO, Les W2LK, Gene K5GS and George HA5UK were having dinner in Budapest, Hungary. After further discussions with Dave K3EL at the

Photo 1: L-R: Pista HA5AO, Luke VK3HJ, Gene K5GS, Norbert DJ7JC, Heye DJ9RR, George HA5UK, Mike WA6O, Glenn KE4KY, Les W2LK, Luigi IV3YER, Dave K3EL, bird unknown. Photo courtesy of Dave K3EL.

German ham radio event at Friedrichshafen the wheels started to turn. Being high on the most wanted list we knew there would be much interest across the global DX community. We contacted the Australian government to learn their requirements to land on the island. After about a month of question and answer e-mails we were cleared to land on the reef for a DXpedition.

During the exchange of e-mails we answered questions about antennas, tents, materials of the tents, fires, camping, bird strike mitigation and so on. I wrote a paper explaining DXCC and IOTA and included pictures of the 2009 DXpedition to Mellish Reef. Shortly afterwards we received an e-mail saying we were good to go to Mellish Reef as long as we were off the reef by May 31st. After that date a permit will be required to land on Mellish Reef. The Australian Coral Sea reefs will then fall under a new strict Coral Sea environmental protection program. Even before this new program was implemented, any boat we used was required to have a permit for conducting commercial operations in the Coral Sea and a minimum of AUD$10,000,000 liability insurance. Throughout this process the agency personnel were helpful and worked with us to get to a positive conclusion.

Next item of business was the radio license. Since I already held an Australian call sign we were initially told the process to get a VK9 call would be fast. As it turned out because I don't live in Australia the process wasn't as smooth as we expected. In the end, with cooperation from the 'Oceania DX Group' (ODXG) in Australia the call sign VK9MT was issued. Several of the VK9MT team members are life members of ODXG; we received a letter from the organization authorizing us to use the call sign while on Mellish Reef.

The team

We formed the team of Pista HA5AO, Les W2LK, George HA5UK, Gene K5GS, Dave K3EL, Glenn KE4KY, Norbert DJ7JC, Heye DJ9RR, Luke VK3HJ, Mike WA6O and Luigi IV3YER; five Americans, two Hungarians, two Germans, one Australian and one Italian. Some team members knew one another from previous DXpedition projects, while others met for the first time. Over the course of the project members of the team worked well together, having fun, coming together as a team and helping one another, as required. The prior DXpedition experience and creativity of the team members was evident. Since all team members except Luigi had been on other DXpeditions, the decisions came easily and reasonable solutions were quickly reached.

You can think of a DXpedition as an extended 'Field Day' and contest. The team is 100% self-sufficient, everything must be planned, inventoried and brought to the island and later returned to the boat. Physical labour is required and everyone must participate. On islands like Mellish Reef the heat and humidity become important considerations so we brought over four hundred litres of drinking water to the reef; some even brought a supply of beer. We also had a supply of sunscreen and encouraged

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Photo 2: The expedition sailing vessel Evohe. Photo courtesy of Dave K3EL.

everyone to protect themselves from the sun with hats, long sleeve shirts and sunscreen on exposed areas. The Northern California DX Foundation supplied tropical shirts that were perfect for this protection; everyone carried a personal water container.

As a safety precaution, team members were required to have emergency evacuation and medical insurance. Each member provided his medical history summarizing any serious medical conditions, medications used, where the medications were kept, and emergency contact names/ telephone numbers, including the member's personal physician's name and contact information. Physical limitations could preclude a person from joining the team. Boarding or leaving the Zodiac, climbing into a bunk, even using the boat's toilets can be a physically challenging task in rough seas and we needed to be sure each team member could be self-sufficient.

The boat

Project requirements were sent to charter firms seeking a boat with the proper survey and operating permits. We selected the expedition yacht Evohe from Dunedin, New Zealand. Evohe is a no frills 'working boat' licensed to carry 12 passengers and a crew of eight. We had used Evohe for a previous DXpedition and were comfortable with her owner/skipper, Steve Kafka, and his pricing was competitive. Steve applied for the operating permit and provided his insurance information.

We selected Mackay as our departure point to minimize the number of days at sea. The Evohe is a six sail sailing ketch with two Ford engines. With a top speed of 10 knots we allowed 3.5 days to reach the reef; we arrived in three days.

The Evohe arrived from New Zealand on March 17th. The skipper had a crew of four, Paul (Ireland), Allison and Shaun (New Zealand) and Joanna (England). The crew had never heard of Mellish Reef, and had signed on for the adventure.

The planning process

Regularly scheduled Skype conference calls were conducted for months to plan every aspect of the project. Responsibilities were assigned, fund raising began and soon various documents began to take shape. Since many of the team members owned Elecraft equipment we agreed to use personally owned Elecraft K3 transceivers and owned and borrowed Elecraft KPA-500 linear amplifiers. We had three Tokyo HyPower amplifiers to round out the six stations, three CW and three SSB/RTTY, including several back-up transceivers, amplifiers and power supplies. The Elecraft equipment performed flawlessly. We had failures with several no-name 12 volt power supplies; however the Astron switching supplies all worked perfectly.

Antennas consisted of SteppIR CrankIRs, BigIRs and verticals using Spiderpoles/SGC automatic tuners and a 40 metre four square, with a Pennant for low-band RX. The 80 metre antenna and 160 metre inverted L towered over the antenna farm. We also had two folding hex beams from foldingantennas.com. The combination of vertical and horizontally-polarized antennas helped to reduce inter-station interference when simultaneously operating SSB and CW on the same band. We used a combination of commercial shipping from EU/USA and hand carrying equipment to our departure point, the Queensland city of Mackay.

Photo 3: Les W2LK shopping at Bunnings in Mackay. Photo courtesy of K5GS.

Arrival at Mackay

During the planning conference calls we created detailed shopping lists of items we would need. The decision was made to purchase as much as possible in Australia to reduce the cost of shipping to and from America and Europe. The advance team arrived in Mackay on March 18th to begin the task of buying equipment. We spent four full days at various Mackay shops buying tents, tools, electrical grid, office supplies, tables/chairs and supermarket items.

All meals would be provided by the boat so all we needed, food-wise, were snacks and drinks not supplied by the boat, that is, beer. At almost every business we visited the staff and customers asked why we were in Australia and what our plans for the equipment were. Some had heard of Mellish Reef, others not, but very few knew about amateur radio DXpeditions. In any event, everyone was very helpful and we were able to find everything we needed without any trouble. At one shop the salesperson directed us to another firm that had a no frills item for $153 that would work just as well for our purposes as his $600 item, and he was right!

Photo 4: Pista HA5AO loading boat. Photo courtesy of Gene K5GS.

In the spirit of giving something back to the community at the conclusion of the DXpedition we donated many of these items to

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the Mackay Girl/Boy Scout Council which was greatly appreciated by them, the generators were sold. On the reef itself, we cleaned up all the discarded plastic bottles and trash we found washed up there (although the amount of plastic trash was very low compared to some Pacific islands).

We had developed detailed antenna plans, coax requirements, tent/antenna layouts, power grids, fuel usage and so on. After communicating with several generator hire firms we learned they don't rent generators for off-shore use. We ordered 4 kW inverter generators branded as 'Tradetested' in New Zealand/Australia. The units were shipped from Sydney and arrived well before we needed them. They too worked flawlessly.

Two of the team members rented a cabin at the local RV (caravan) park. This turned out to be an excellent place to consolidate equipment to and from the boat, to test radios/antennas, and for the team to enjoy some downtime.

Since the boat had arrived early, the skipper said we could load the boat well in advance of departure. We made many trips to the boat loading equipment in small groups over several days versus spending the better part of a day loading. The weather at Mackay was very hot and humid, the boat was docked about as far from the car park as a boat could get and the entrance to the dock was via a long, steep ramp which made the work even harder and the occasional heavy rains added another level of difficulty to the job. Everything was brought to the boat using borrowed carts. The boat crew helped us to carry the equipment to the boat and then handled the task of lifting everything to the deck and stowing it in the boat's various storage holds.

Departure day

On the afternoon of March 25th we set sail for Mellish Reef. Prior to sailing, the boat was visited by three Australian Customs Officers to complete the departure formalities. The winds were not in our favour, and we used engines the entire journey. The seas were rough and the ride very difficult.

Photo 5: Crewmember Paul with tuna. Photo courtesy of Dave K3EL.

During the sea voyage the crew caught a tuna which provided excellent steaks for two meals. The skipper, Paul, and Shaun brought in the tuna although the energetic fish had other ideas about boarding the boat; Shaun expertly prepared the fish for later meals. A professional fisherman we met at the marina explained to me that humans should not eat certain fish caught at the reef. These 'reef fish' contain a toxin that causes the illness 'Ciguatera' which produces serious gastrointestinal and neurological effects which can last weeks, months and in extreme cases up to twenty years.

Arrival day

We arrived at the reef in the afternoon of the 28th (local time) and began bringing some equipment ashore in a Zodiac and setting up the operating tents. Early on the morning of March 29th we began taking radio equipment ashore and establishing the operating camps. The wind was our constant companion, blowing at a steady twenty knots. Erecting the

Photo 6: First view of Mellish Reef. Photo courtesy of Glenn KE4KY.

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Photo 7: Luke VK3HJ setting a dead-man. Photo courtesy of Gene K5GS.

tents and antennas in the strong wind was an early indication of what was to come. The wind made the trips in the Zodiac 'interesting.' Sea water was showering us as the Zodiac drove into the wind on the way to the reef, the skipper asked us to get under a tarp so we wouldn't get drenched.

Because of the sand depth, guy and tent stakes required a different technique versus the traditional driving them into the ground. We bought seventy five pieces of pre-cut rebar and as many pieces of landscape stakes. A dead-man arrangement had to be used to set the guys and tent ropes.

George HA5UK, donned his swimwear and snorkel and swam out to a coral head that he used to guy two 18 metre Spiderpoles and one of the BigIRs.

Photo 8: George HA5UK setting guy on submerged coral head. Photo courtesy of Gene K5GS.

Photo 9: Operating site. Photo courtesy of Glenn KE4KY.

Due to the risks from the barely-submerged coral heads, it was determined that it was not possible to travel safely to and from the reef between sunset and sunrise. We created a shift schedule that required one team to remain on the reef 6 PM to 6 AM every other day. Although twenty four hour radio operations were allowed, the off duty team went back to the boat for sleeping.

On the air

All six stations went on the air March 30, with Dave K3EL making the first contact with ZL4PW. The pile-ups remained heavy and energetic throughout the DXpedition! We adopted an operating routine and kept as close to the routine as possible. However, day by day we noticed the wind was gradually increasing and we were beginning to experience heavy rains.

Propagation was excellent on the HF bands with openings to all parts of the world. The HF bands were on fire, with 10 m–20 m providing 88% of the QSOs. Despite the cracking conditions on the high bands, we spent some time on 40 m/80 m and were rewarded with remarkable conditions one night on 80 m, with the US and EU coming in as if it were 20 m. The 160 antenna went up last, and because

Photo 10: Pista HA5AO on CW. Photo courtesy of Gene K5GS.

of weather events described later, we were able to operate only one night. The combination of variable propagation and the shortened operating time impacted mostly the low bands.

On April 1st the skipper said he was monitoring a tropical depression north of Mellish Reef. Eventually this weather event caused death and destruction in the Solomon Islands and would later be officially named Cyclone Ita, a very late-in-the-season cyclone.

We continued operating for five full days but it was becoming evident that the weather was getting worse. The skipper was closely monitoring the situation and keeping us updated. He wasn't in panic mode yet, but did express concern that the storm was growing. In case we had to make a fast departure we removed all non-essential equipment from the island shortly after the formation of the storm, dismantled some antennas and scratched deployment of others.

During the night shift of April 4th the wind and rain became a real concern. While the operating tents were holding up reasonably well, the break tent was severely damaged the day before. The antennas were taking a beating and required constant attention; resetting guy ropes and reattaching broken wires became a daily maintenance activity.

QRT

On April 5th at about 0200 (local) the decision was made to go QRT. The tents were shaking violently in the now 35 - 40 knot winds and torrential downpours threatened the safety of the operators. The tropical storm to our north continued to strengthen day after day, and would soon be declared a named cyclone. Although at the time we were only on the edge of the disturbance caused by Cyclone Ita, the forecast storm track took it towards Mellish Reef. In previous discussions with the skipper, he indicated that it was critical that we leave before the storm could overtake us in order to be able to make it safely back to Australia. We began to pack the radios and amps in their Pelican cases. When the morning shift arrived we spent the next 5–6 hours removing equipment from the reef and preparing to set sail for Australia.

Photo 11: L-R: George HA5UK, Mike WA6O and Dave K3EL on CW. Photo courtesy of Les W2LK.

Return to Mackay

The winds were strong and in our favour and we were under sail the entire way back, no engine noise, just the sound of the sea against the hull. The ride was as smooth as could be expected. We arrived at the Mackay marina at 0230 (local) on April 8th. The skipper skillfully navigated the channel and easily brought Evohe to the wharf.

That morning we hired two vehicles and began offloading the boat, bringing all our gear to a cabin we rented at the nearby RV (caravan) park. Over the next two days we sorted equipment, repacked it for shipment back to the USA and Europe, rebooked flights and identified the equipment to be sold and donated.

Daily challenges

Of course, the weather presented the biggest challenge. Prior plans had to be changed to account for the weather. While we did experience some antenna damage we had additional antennas and spares that were not deployed due to the early QRT decision.

We had challenges from the sound of the wind blowing across/through the tents which, at times, made it difficult or impossible to hear the radios, even when wearing headphones. At the last minute before leaving Mackay we bought an additional two small tents to use for resting. These tents were light backpacking types and were destroyed by the wind within hours of being erected. The operating tents were much sturdier, with metal frames, and withstood the constant beating of the wind without issue.

Guy and tent ropes needed constant attention, primarily due to the sand base and lack of a solid footing. The vertical wire antennas required daily attention as wires snapped and the antennas leaned over from the wind. The folding hex beams performed very well but after five days of withstanding the moisture laden strong wind we noticed they were losing their

shape. They both continued to work but on the last night of operation, right about the time we went QRT, we lost a guy rope on one of them and it came down. Not that it was funny at the time, but Pista HA5AO and I didn't see the antenna in the night and went looking for it with torches (flashlights). We couldn't find it and wondered if it was taken by aliens or swept into the sea. In the next morning's daylight we found the antenna on the sand.

DXpeditions will test your ability to handle stress and adapt to the unplanned. Meeting people, maybe for the first time, living on a small boat in rough seas, building a tent/radio city in high temperatures, wind and humidity will challenge anyone's ability to cope with physical and emotional stress. Add to this the isolation of being on an island and 24 hour radio operations and it's not surprising you might need a vacation when you return home. Additionally, the human side of a DXpedition is a real consideration. The Team Leaders are not only in charge of the project but they must ensure the well-being of each team member. People react differently to these challenges; the team leaders must handle all situations and they did just that on Mellish Reef.

We had to be careful not to disturb the ground nesting birds. Many had eggs on the ground and would become agitated if we got too close. We marked the nests with sticks so we could see them at night. We also marked any rebar and wooden stakes that were above the ground to prevent tripping. Other than a cut finger we had no injuries or accidents on the reef. Neither birds nor eggs were injured.

Results

Our goal was to work 80,000 QSOs and concentrate on RTTY. Unfortunately, the weather has a nasty habit of changing the best made plans. We were on track for 80 K but closed the log on 4 April, at 1353Z after 40 K QSOs including about 3,400 RTTY Qs. We were unable to spend as much time on the low bands as we had planned. However, we enjoyed excellent openings on the high frequency bands 10–30 metres.

In general, the DX community cooperated nicely during the pile-ups, with the usual suspects causing much of the chaos typically experienced by DXpeditions. Sometimes I think they will never learn that by continually calling in the blind they ruin their own chances of getting in the log, and many did lose their contact with VK9MT.

We appreciated those operators that followed the DX Code of Conduct and wish those that didn't would recognize the problems they cause themselves and everyone else.

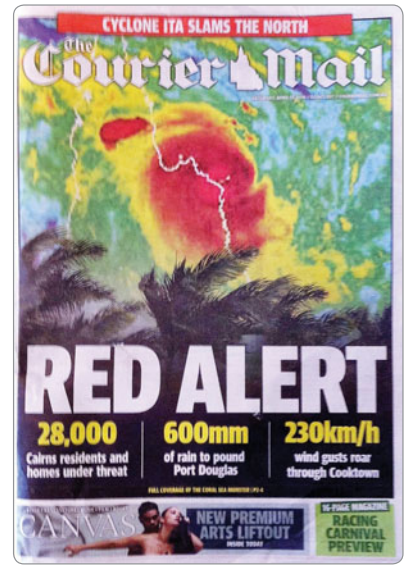


Photo 12: 'Courier Mail' headline. Photo courtesy of Gene K5GS.

VK9MT statistics

Operating Time:	First QSO:	2014-03-30 04:34:00
	Last QSO:	2014-04-04 13:53:00
Number of QSOs:	Total QSOs	40,114
Continent:	- Europe	36.1%
	- North America	29.1%
	- Asia	29.8%
- Oceania		3.4%
Mode:	- CW	61%
	- SSB	30.5%
	- RTTY	8.6%
All Time New One:	- All modes	26.1%
Unique Calls:	- 12,831	32%

The leader board was not used for this DXpedition.

Cyclone Ita

Cyclone Ita eventually intensified to become a Category 5 storm with maximum winds of 210 kmh. By the time it hit the north Queensland coast it had weakened to Category 4, but still caused an estimated one billion dollars (AUD) in damage. While there was no loss of life or serious injury in Australia, the storm flattened sugar cane fields, ruined banana crops, cut the state's main highway and left a mammoth clean-up task in her wake. Most of the team was away from Australia by the time the storm arrived, however intrepid travelers Dave K3EL and Glenn KE4KY did experience some of the storm's fury. Cyclone Ita also created havoc in Auckland, New Zealand where I was staying on the way home from Australia. We found ourselves trapped in the house for a day when a tree fell across the driveway to the main road.

Wrap Up

While we were disappointed with our early departure there are some things we can't control. No one was injured; we thought it prudent to not take any risks with the building storm. We had greatest confidence in the skipper's judgment and his crew.

We very much appreciate the support from the global DX foundations, clubs and individuals who helped make this project a reality; our corporate sponsors were equally important to the project. The global pilot team did a wonderful job as does our QSL Manager Tim Beaumont, M0URX. We met many fine people in Mackay who assisted us before and after the project.

We especially want to thank Jenny McGrath, owner of Mackay Pack and Send (a shipping business) who worked tirelessly before and after the DXpedition. The staff at Pack and Send was invaluable to the project. We arranged for our shipments to be received by Jenny. She asked where we planned to store the equipment; I told her we'll hire a self-storage unit. She said that wouldn't be necessary, we could leave the equipment in her storeroom and also any luggage not needed on the boat during our trip to the reef. Before we left Australia she invited the team to her home for a BBQ the night before we began leaving Mackay.

It seems that Jenny is a fan of American baseball and she jokingly mentioned to Glenn KE4KY that she'd like to have a Louisville Slugger baseball bat. What Jenny didn't know is Glenn has a friend at the factory and he arranged for Jenny to receive an original Louisville Slugger. The bat arrived while we were in Mackay.

Photo 13: Masked boobies queuing up for the loo. Photo courtesy of George HA5UK.

The highlights of the project were many, including giving ATNOs, putting people on the Honor Roll and Top of the Honor Roll, and supporting the local Mackay Scouting Council with our equipment donation.

I'd be remiss by not mentioning the camaraderie, cooperation and friendship of the VK9MT team, the global pilots and all those who helped us throughout the project. And thanks to Dave K3EL, Pista HA5AO and Les W2LK for editing this article.

We'll close with a fun photo titled 'Masked boobies queuing up for the loo.'

The team is already discussing their next project.

Please visit our website at *www.vk9mt.com*

Graham Kemp VK4BB Gets Life

Robert Broomhead VK3DN

WIA President Phil Wait VK2ASD presents life membership to a rather surprised Graham Kemp VK4BB via telephone.

On Saturday the 17th of May, at the WIA 2014 AGM meeting held at Aussie World on the Sunshine Coast, WIA broadcast news anchor and broadcast manager Graham Kemp VK4BB was awarded life membership of the WIA. In presenting the award WIA President Phil Wait commended Graham on his enormous contribution to the WIA producing the weekly news broadcast since the inception of the National WIA.

"Producing the WIA broadcast is an enormous task that Graham has done with professionalism and dedication for over 10 years. His contribution to the WIA and to amateur radio is simply outstanding", said Phil.

The WIA broadcast attracted 113,700 readers and listeners, 34,800 RF Check-ins and 41,400 streaming downloads during 2013.

Congratulations to Graham Kemp VK4BB.

The 2014 Annual Conference and AGM – a personal review

Roger Harrison VK2ZRH

This year's event was the fourth that I have attended, having been to the conference weekends in 2009 (Churchill VK3, GippsTech Special Edition), 2010 (the Centenary, Canberra VK1) and 2012 (Mildura VK3). However, this year's Annual Conference was different in two particular ways – the Annual General Meeting (AGM) is a statutory meeting and I was "on my honour" to attend as a Director of the WIA; secondly, I had never been to the Queensland Sunshine Coast (unlike others in my near family), so I was keen to check out the neighbourhood and its special attractions.

As it transpired, my wife and I flew into Maroochydore at lunchtime on Friday 16 May, in the midst of a rain shower. So much for beautiful one day, perfect the next. Sunshine Coast? Bah, humbug! Extracting tongue from cheek, good vibrations were retrieved by the taxi driver providing some insightful commentary during our ride into Mooloolaba. I used to think the Sydney harbour-side suburb of Woolloomooloo had the most rhythmically evocative place name in Australia. After our weekend visit, I think Mooloolaba moves into first place.

Described as a suburb of Maroochydore, Mooloolaba is noted as a tourist resort township, boasting 75 hotels and many other accommodation venues. With sparkling beaches, a myriad of waterways, palm trees, somewhere to eat and drink every three paces, surf and sunshine, all without the hustle-bustle distractions of the Gold Coast, Mooloolaba proved a great choice as a centre for the 2014 WIA Annual Conference.

The weekend kicked-off informally on the Friday at the Alexandra Heads Surf Life Saving Club, with Head Office staff doing early-bird registrations in the afternoon leading into conference participants socialising over drinks followed by dinner in the vicinity. Unfortunately, I couldn't make it, but reports the following day from those who did indicated a fine time was had swapping stories about DX caught and lost along with comparing soldering scars and opinions on the solar cycle (missing in action).

Saturday is always "the big day" for these events and so we found ourselves bussed from our Mooloolaba digs, along with a gaggle of other AGM attendees picked up around the town, out to Aussie World on the Bruce Highway. Fronted by the picturesque Ettamogah Pub, we were directed to the Shed behind the said pub – a cavernous auditorium rather reminiscent of outback sheds of yore. Tables and seating were laid out for a casual banquet, neither too spaced-out in the Shed's vast expanse, nor too cheek-by-jowl that they would impede the free flow of people swapping seats while socialising. Commercial sponsor's display tables were arrayed along one wall, providing easy access for browsing during breaks. The "head table" was at the "stage" end of the Shed.

Finally, at 9 am the crush of eyeball QSOs was called to order and President Phil Wait VK2ASD opened proceedings for the crowd of some 90 members and a gaggle of guests. He then embarked on announcing all the annual merit awards. Appropriately, Graham Kemp VK4BB, our broadcast news anchor and announcer, was the recipient of the WIA's topmost award – Life Membership. Graham was not able to be present in person, but we all copied his reaction via a phone hook-up. The Chris Jones Award, recognising those who have made an exceptional contribution to amateur radio and the WIA, went to a startled Marc Hillman VK3OHM, the creator of the new WIA online award system. The Higginbotham Award went to Don Jackson VK3DBB in recognition of his years of service on the Publications Committee and, in particular, his work in compiling the Annual Index for *Amateur Radio* magazine and collating a Cumulative Index of all issues of *AR*. The *Amateur Radio* Technical Award for the best technical article published in *Amateur Radio* in 2013 year went to Graham Byrnes VK3XDK for his article on Transverter Systems in the December 2013 edition of *AR*. The Al Shawsmith Award for the best non-technical article published in AR in 2013 was awarded to Stephen Warrillow VK3SN for his article titled 'The Overland Track – HF QRP in the VK7 World Heritage Wilderness'.

The Ron Wilkinson Achievement Award went to Alan Devlin VK3XPD for achieving multiple microwave distance records, for sharing knowledge, teaching at both clubs and GippsTech, for his contributions to WIA publications, and for nurturing amateur technical development. The G.A. Taylor medal, for exceptional service to the WIA, was not awarded for 2013. These major awards were followed by a flock of President's Commendations. While not all recipients were present, it was good to see the surprise and pleasure on the faces of those who had their award formally presented by the Phil VK2ASD. All the awards have been published on the WIA website and in WIA News.

With the happy stuff out of the way, the AGM was officially declared open and the chair, President Phil Wait VK2ASD, got down to the business of the AGM itself, which covers the statutory formalities concerning the Institute's governance and financial operations. This took only a short time to conclude and was followed by the Open Forum. This segment affords attendees the opportunity to ask questions, make statements and air brickbats or bouquets.

Breaking with tradition, this year the Open Forum Reports for calendar year 2013 were published ahead of the AGM and posted to the website on 5 May; copies were distributed to all registered attendees, included inside a neat satchel provided by ICOM. In the past, the Open Forum Reports were distributed on the day of the Forum. Each of the WIA committees provides reports of activities, salient observations and recommendations – an annual record of the Institute's committee system at work.

Some new issues were raised from the floor of the Open Forum, as well as some consistent themes. Licensing, licence fees, licence assessments and licence conditions all came up, along with band plans and beacon coordination, contests and field days, electromagnetic emissions compliance, promoting the hobby and attracting newcomers. Without any prior agenda, the Chair and Board members have to think on their feet in providing responses to questions and issues raised by members from the floor. As I have noted in other years, there's generally a little anticipatory tension in the air; this year was no different. Although some differing views emerged among members raising particular issues, the exchanges were civil (if not cordial) and the audience assembled maintained interest – which means I noted only three people who went to sleep during the Open Forum! One interesting piece of news that arose was the successful efforts by some clubs that are involved in Men's Sheds providing radio and electronics facilities and knowledge interchange with the aim of attracting newcomers to the hobby. Overall, the Open Forum is a useful in-person interchange between members and the Board, and an anchoring segment of the WIA Annual Conference.

After lunch came the Technical Symposium segment, with four presenters regaling the audience with presentations on different aspects of contemporary amateur radio in Australia. Unfortunately, the notified presentation on 2 m Meteor Scatter from Dr Kevin Johnston VK4UH was withdrawn as he could not attend.

Peter Schrader VK4EA gave a well-illustrated overview of emergency communications and the interfacing of WICEN to the real world, with particular reference to experiences in southeast Queensland. It's good to see the effort and enterprise of dedicated people adapting amateur radio operation to today's emergency communications environment.

"Promoting Your Club" was the subject of Scott Watson VK4CZ's presentation, during which he engaged the whole audience in an exercise to have everyone think about all the diverse aspects of the topic and how to address the challenges. No doubt a few clubs will be regaled with suggestions from members who sat through Scott's presentation, to tackle club promotion afresh.

Following Scott, yours truly harangued the audience on amateur's EME/EMR obligations with a presentation titled "We Need to Talk About Your Emissions". Although somewhat of a hot topic, I leave others to comment on my performance. I did have to answer a few penetrating questions from the audience, satisfactorily I hope.

The Symposium was completed by Richard Philp VK4RY on "Fund Raising for Clubs". Richard recounted the saga of how the Sunshine Coast ARC obtained a caravan, fitted it out for promotional activities and for deployment on community support and emergency exercises, along the way collecting a six-figure grant. A tale that puts James A. Michener novel to shame.

Dinner that evening was a "big country" buffet and, once all the chewing was over, guest speaker Stuart Gudgeon from Australia Zoo entertained us with daring pictures and tales of derring-do in hands-on crocodile research and conservation. Stuart has been closely involved in Australia Zoo's program to track the movements of estuarine crocodiles, attaching small electronic tags to the reptiles that track their wanderings and transmit data via satellite. Although I've installed electronic and radio equipment in some strange and exotic places during my career, Stuart's adventures take the cake in my book! For annual dinner entertainment, Stuart was a good choice, providing local colour along with technological interest.

As I did not attend the Sunday's local tourism excursions, I can offer no comment.

Over the course of Saturday, I noted many familiar faces from past Annual Conference weekends: Ross VK2VVV, Jim VK3PC, Keith VK5OQ, Eric VK2VE, Bob VK3XP, Jamie VK2YCJ, Arthur VK2BBI, Grahame VK2FA, Bruce VK3UV and Ron VK3AFW; apologies to others I may have missed. That said, it was good to make acquaintances and chat with some "new faces", too – Lionel VK2BDX (a newly-minted licence) and Andrew VK4NDY had never been to a WIA Annual Conference and each are less than half the median age of WIA members. There is hope for the future! I guess this year's event was also a first for many other attendees.

A big pat on the back is due our host club for the event, the Sunshine Coast Amateur Radio Club (SCARC), led by Richard Philp VK4RY and Trent Sampson VK4TS (a previous WIA Director) who encouraged a team of people to help stage an enjoyable Annual Conference.

DXer of the Year 2013

Bob Robinson VK3SX - WIA Federal Awards Manager
Marc Hillman VK3OHM - Technical Engineer on behalf of the WIA Awards Committee

The online award system was introduced in January 2014, and since that time it has been enthusiastically adopted and is a runaway success. As of mid-May, we have awarded nearly 200 new awards. This does not include award endorsement upgrades, of which there have been many. Currently, only about 100 people are using the system, so if you are not using the online award system, I recommend you do – it's probably the easiest system in the world to use.

As a by-product of the award system, wherein we have details of every QSO, we are able to calculate the DXer of the year. And the winners are!

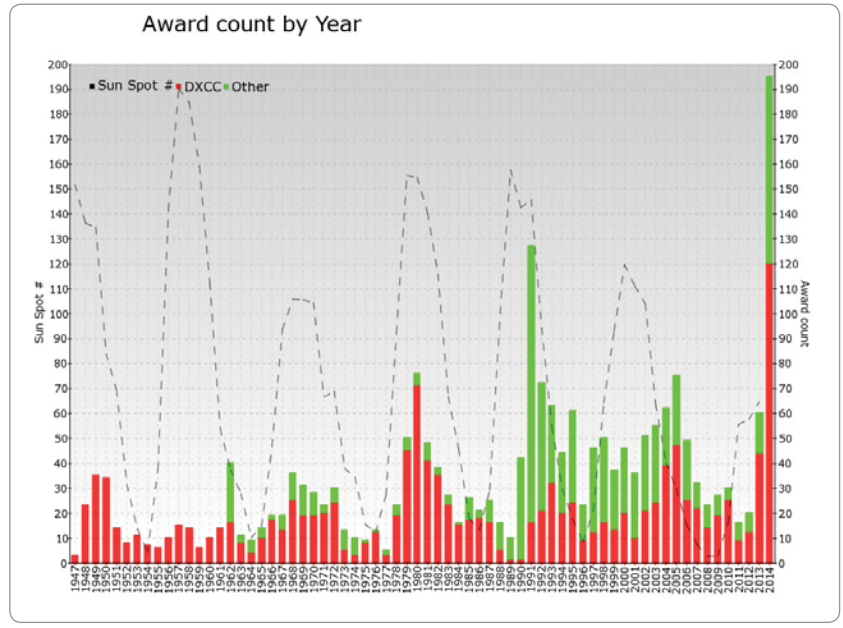


Figure 1: An analysis of DX awards allotted by year since 1947.

Places in category are coloured First Second Third

Year: 2013 Display

DX Leader Board for 2013 (Top 30)

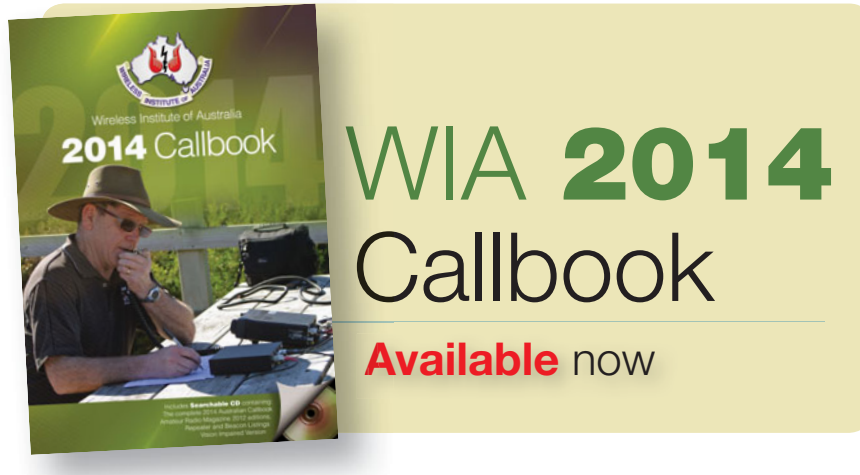
Call	Name	DXCC	Open	Phone	CW	Digital
VK3EW	David McAulay	214	719	394	334	175
VK3HJ	Luke Steele	208	606	134	528	31
VK6DU	Lance Martin	193	533	187	395	192
VK5ZK	Garry Herden	184	458	253	185	158
VK5BC	C Cleland	180	522	343	170	138
VK3MSD	Shaun Stoddart	174	282	180	134	0
VK3VT	Greg Williams	158	303	118	130	169
VK6IR	Stephen Chamberlain	150	413	142	115	276
VK3MEG	Steven Barr	146	260	260	0	0
VK7ZE	Laurence Davison	144	272	189	94	10
VK2CA	Allan Meredith	139	342	74	123	220
VK5PAS	Paul Simmonds	138	269	236	0	95
VK3TZ	Anthony Burt	135	282	156	180	0
VK2MWG	William McCarron	129	210	158	7	100
VK2PR	Peter Richardson	128	164	145	4	60
VK6WX	Wesley Beck	126	193	124	79	19
VK3SX	Bob Robinson	124	227	212	25	0
VK2HV	Paul Hanna	123	182	85	133	0
VK4CAG	Graeme Dowse	121	159	152	0	9
VK3EY	Robert Puise	120	270	233	0	107
VK5DG	David Giles	120	311	110	0	278
VK3OHM	Marc Hillman	114	171	126	8	63
VK3DGN	David Green	105	160	41	114	28
VK6MAB	Miles Burke	103	144	48	41	107
VK4MN	Peter Nilon	95	145	145	0	0
VK2IUW	Hilary Bridel	85	130	38	24	84
VK4BL	Albert McDivitt	77	153	52	0	138
VK2CCJ	Clifford Hynds	75	161	5	18	154
VK4TJF	James Fleming	74	135	22	128	0
VK6RO	Graham Rogers	67	127	45	103	4

Figure 2: The list of DXers with their confirmed scores, and the awards as allotted for those 2013 DXing performances.

Well, there are five categories for DXer of the Year – the most number of unique DXCC entities verified, and one for the most number of unique band slots for the Open, Phone, CW and Digital modes. And the winners are shown in the table below.

The winners will receive a certificate, and acknowledgement in *AR* magazine. Congratulations to all, and I expect 2014 to be a very competitive year as more people embrace the online award system.

DXCC, Open and Phone:	David McAulay VK3EW
CW:	Luke Steele VK3HJ
Digital:	David Giles VK5DG



Worldwide doyen of amateur radio honoured

Jim Linton VK3PC

On a trip to Melbourne Timothy Ellam VE6SH/G4HUA, IARU President of the International Amateur Radio Union, formally presented Dr David Wardlaw VK3ADW with the IARU's inaugural Michael J Owen Award.

The presentation was at the Wireless Institute of Australia's (WIA) headquarters in Havelock Road, east suburban Bayswater before a small gathering of those involved with the IARU, WIA, family and friends.

Tim Ellam thanked those who organised the morning tea, (followed by a city luncheon later joined by Nan Owen and daughter Jen), and said, *"The WIA remains one of our most important member societies in the IARU and we value your participation in our affairs."*

He acknowledged the presence of IARU Region 3's President Gopal Madhavan VU2GMN and Director Geoff Atkinson VK3TL as well as Monitoring System Coordinator Peter Young VK3MV, and the Chairman of the Disaster Communications Committee Jim Linton VK3PC.

Speaking of the Michael J Owen Award, Tim said, "We were of course immensely saddened with Michael's sudden passing. (The IARU Region 3 Chairman and WIA President died on September 22, 2012.) Michael was a rock for all us and for his achievements both with amateur radio in Australia and those who became involved in the IARU were remarkable.

"His commitment to amateur radio was exemplary. Many of us here today can speak to his keen intellect and wit. Many also speak to his kindness and mentoring of new radio amateurs involved in the IARU."

Tim said one of his goals on becoming the IARU President was to recognise our volunteers. This was from a recognition that people spent long hours for the good of amateur radio, often with little recognition.

Photo 1: L to R: IARU President Tim Ellam VE6SH/G4HUA, Dr David Wardlaw VK3ADW and IARU Region 3 President Gopal Madhavan VU2GMN after the presentation.

"With Michael's passing it seemed fitting that this recognition should incorporate his name," he said. The IARU Administrative Council (AC) felt that no other radio amateur better exemplified the IARU volunteer, and named it the Michael J Owen Award.

In 2013 the IARU AC acted to make the inaugural appointment of two radio amateurs who were the unanimous choices for dedication and work for the IARU.

Wojciech Nietyksza SP5FM (who was presented with the award by IARU Vice President Ole Garpestad, LA2RR in Warsaw on 17 May 2014, for decades of exceptional service) and now Dr David Wardlaw VK3ADW receiving the same award.

The Australian became involved with the IARU in 1968 as part of the Secretariat provided by the WIA for the inaugural conference of the IARU Region 3 in Sydney.

While serving as WIA President, he attended the 1976 IARU world meeting in Miami, in conjunction with the Region 2 Conference, at which the global objectives and strategy for World Administrative Radio Conference (WARC-79) were developed.

Along with Michael Owen, David was appointed to the Australian delegation at WARC-79 to represent amateur radio. It was one of the most significant conferences for the International Telecommunications Union (ITU) in many ways.

For amateur radio it meant the allocation of the so-called WARC-bands for the Amateur Service, a major development that occurred during a very busy agenda. The pair returned home having played their

Photo 2: The official Award plaque.

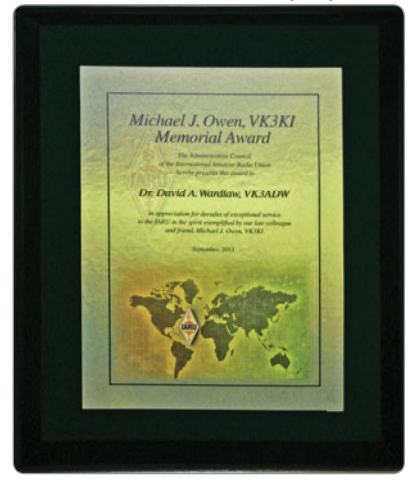


Photo 3: A very pleased Dr David Wardlaw VK3ADW surrounded by those present for the Award presentation.

roles in that IARU victory, but went on to serve further.

David was a Director of IARU R3 1988-1994 and 1997-99, resigning in that time to succeed Michael as IARU Vice President, serving in that role from 1994-2004.

Tim Ellam fondly recalls that he succeeded David as IARU Vice President, and in the hand-over David imparted his wisdom and guidance for this role.

He said, *"David was an effective representative of both amateur radio and the Australian administration at the ITU."*

"His expertise was such that those he encountered assumed that 'Dr Wardlaw' held a Ph. D. in some field related to physics or engineering, but in fact, he was a dentist."

"To this day, many ITU attendees speak often and highly of Dr Wardlaw, and I am continually asked when we will see him again."

In presenting the Michael J. Owen Award, the IARU President said, *"I can think of no one more fitting to be presented with this award than you."*

A humble David Wardlaw received the accolade, saying it was a deep privilege to be awarded. He recalled that a young Michael Owen, then a law student, had shown an interest in the way radio was regulated, and after a Sunday morning at his house interested him in amateur radio.

While he made many friends at the IARU, he quipped that the ITU Committee Chairman would refer to him by his name, rather than a country like other delegates, giving him some added importance.

David is known for his quiet and diplomatic approach to important matters, but his truly thoughtful effectiveness on them can never be challenged.

Increased EMR knowledge in our syllabus

Jim Linton VK3PC

The Australian Communications and Media Authority (ACMA) has amended our amateur radio regulations syllabus, to expand the demonstrated knowledge of Electromagnetic Radiation or EMR.

Safety has been on ACMA's agenda for a considerable time, and is seeking to minimise risk and promote safety across all its operations. This includes amateur radio. The process to include EMR into the existing Amateur Radio Syllabus at all three licence levels, commenced about 18 months ago.

One of the outcomes of the high-power trial for Advance licence holders, which the ACMA in consultation with the Wireless Institute of Australia (WIA), found that EMR knowledge could be increased. The WIA had a speaker on the topic at the Technical Symposium during its annual general meeting in May and some radio club meetings have included EMR.

The teaching of prospective radio amateurs already includes the importance to keep all persons (and animals) a safe distance from antennas, their orientation, the role of Effective Radiated Power, and radio wave danger increases with higher frequencies and power levels.

The ACMA has gone further with its amended syllabus to spell out knowledge that EMR is a condition for all classes of amateur licence, and recall where to locate the ACMA document titled "EMR Assessment Guide for Amateur Radio".

It also wants known that the "Australian Radiation Protection and Nuclear Safety Agency" (ARPANSA) sets the standard for Maximum Exposure Levels, 100 kHz-300 GHz, its principles and methods of measurement.

New licence assessment papers from the WIA Exam Service issued to assessors from June 2014 will reflect the new EMR provisions. The additional teaching time should be minor, but it will reflect knowledge of the licence requirements.

EMR requirements which also reflect community concern about radiation from transmitters, will now be taught slightly differently spelling out all the related syllabus requirements, and that ARPANSA sets the exposure standard in Australian New Zealand, and its measurement.

The ACMA undertakes each year a random sample of all types of licences, in an audit of compliance. Does your station meet the requirements?

Presentation of the 2014 Chris Jones Award

Robert Broomhead VK3DN

On Saturday the 17th of May at the 2014 WIA Open Forum held at Aussie World on the Sunshine Coast, WIA President Phil Wait announced the Board's decision to present the Chris Jones Award to *Marc Hillman VK3OHM*. The Chris Jones Award is inscribed *"The Chris Jones Award honours the memory of a man who was dedicated to the advancement of amateur radio and whose unfailing commitment and vision led to a new Wireless Institute of Australia ... It is awarded to radio amateurs who have made an exceptional contribution to amateur radio and the Wireless Institute of Australia."*

Marc VK3OHM has designed and built the new WIA online award system. The Chris Jones Award was made in recognition of the significant amount of time and effort that Marc had invested in the development and coding of this unique and powerful online system. The announcement was greeted with an enthusiastic applause from the members at the meeting.

A number of other very important award presentations were also made:

The Higginbotham Award

Presented to Don Jackson VK3DBB for many years of service on Publications Committee and in particular his work in compiling the Annual Index and his work on collating a Cumulative Index of all issues of *Amateur Radio* magazine.

The Ron Wilkinson Achievement Award

Presented to Alan Devlin VK3XPD for achieving multiple microwave distance records, for sharing knowledge, teaching at both clubs and GippsTech, for his contributions to WIA publications, and for nurturing amateur technical development.

The *"Amateur Radio"* Technical Award

For the best technical article published in *Amateur Radio* in 2013 year was presented to Graham Byrnes VK3XDK for his article titled 'Transverter Systems', published in the December, 2013 edition of *Amateur Radio* magazine.

The Al Shawsmith Award

For the best non-technical article published in *Amateur Radio* in 2013 was awarded to Stephen Warrillow VK3SN for his article titled *'The Overland Track – HF QRP in the VK7 World Heritage Wilderness'*.

President's Commendations

Phil Wait awarded several Commendations:

Richard Cerveny VK2AAH for services to amateur radio: beacon and repeater coordination.

Jason Daniels VK2LAW as a WIA National news reader over many years and for his work with WIA Affiliated club MNCARG.

Mal Alexander VK2YVA for services to amateur radio: leadership in amateur radio at a club level

Felix Scerri VK4FUQ for services to amateur radio: WIA National News Announcer over may years

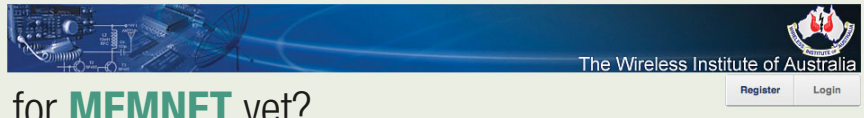
Rick Rogers VK4HF for services to amateur radio: restoration of Armadale and District AR Club

Geoff Emery VK4ZPP for services to amateur radio: WIA VK4 News reader over many years

Joseph Gelston VK7JG for services to amateur radio: construction and maintenance of Tasmanian remote area Repeaters and beacons.

And the *VK9NA Group* for the VK9 DXpeditions in 2010 and 2011.

MEMNET



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Please email ***memnet@wia.org.au*** with your email address, name and membership number.

If you are changing your email address, please *remember to update* your information in **MEMNET**.

Building an HF broadcasting station in the outback

John Clark VK2TK

Over the past ten years, a large shortwave broadcasting facility has been under development in the northwest of outback Australia. Its signal now reaches millions in Asia and the South Pacific with the message of the Christian Gospel, with English language tuition, and programs on family health and welfare. Never mind 400 W PEP and just one antenna in your suburban backyard, this station has 100 kW transmitters, and an antenna farm over a kilometre long!

Its callsign is HCJB (recently renamed 'Reach Beyond'), a highly respected international shortwave broadcaster since 1931 before either the BBC World Service or the Voice of America got started. Originally, they were based in Ecuador, and now operate in Western Australia just outside Kununurra in the East Kimberley. Since 2009 I've been one of the many volunteers working there each year, and their move to far northern Australia is a story worth telling.

HCJB's history really begins in Chicago in the roaring '20s, where it wasn't all bootlegging, the mob, and 'Some Like it Hot.' As radio broadcasting was getting started, William Thompson, then Mayor of Chicago, invited an evangelist called Paul Rader to broadcast his gospel message on Sundays from a wooden shack on the roof of City Hall. This attracted a bigger audience than Rader ever reached in public meetings, and America wide broadcasts soon followed. A Salvation Army trained trombone player called Clarence Jones playing in Rader's band was deeply impressed, and became convinced God was calling him to set up a short wave missionary radio station in Latin America where there was a huge audience to whom he could bring the message of Christ as the Saviour of the world.

Photo 1: The antenna farm at Pifo (Ecuador) against a backdrop of the Andes.

After searching around, Jones and his friends got government permission to run a radio station in Ecuador for 25 years. They set up in Quito, the capital city 2800 metres up in the Andes, an ideal location for broadcasting, and began transmissions on Christmas Day 1931. This was some step of faith, because there were only about six radio receivers in all of Ecuador at the time! Arrangements were pretty basic, the studio was Jones's living room with a 200 watt table-top home brew transmitter and a simple wire antenna. They even wound their own power transformers.

HCJB is a Spanish acronym for 'Hoy Cristo Jesus Bendice', meaning 'Today Jesus Christ Blesses' or in English 'Heralding Christ Jesus' Blessings.' HCJB was well received, and expanded their operations, so that by 1940 they were running a 10 kW transmitter designed by Clarence Moore, also famous for the cubical quad antenna and late.

Being heard worldwide, HCJB soon became an established international broadcaster as programming steadily expanded with new languages, more transmitters, and more antennas. As part of its Christian outreach, programming has always included practical material such as English language tuition, and health and family welfare information giving it broad audience appeal.

In 1952, urban sprawl in Quito impelled a move to Pifo about 15 km away, where they had more room, and even ran their own hydro-electric power plant. By 2000 as Photo 1 shows, the Pifo site was a huge antenna farm that allowed broadcasting simultaneously on a number of frequencies chosen to provide the best coverage for

target audiences, and informed by propagation and signal coverage prediction software such as VOACAP.

In 2009 HCJB began shutting down its shortwave broadcasting operations in Pifo because their towers were in the way of the new airport being built there, and instead focussed on newer technologies for that region, including internet and satellite services, and planting local low powered AM and FM community stations run and programmed by locals who knew their own language and culture best. Today, there are more than 350 such stations in places such as the Pacific, Thailand, Nepal, Cambodia, and Indonesia. One medium power shortwave transmitter still runs at Pifo to reach remote parts of South America.

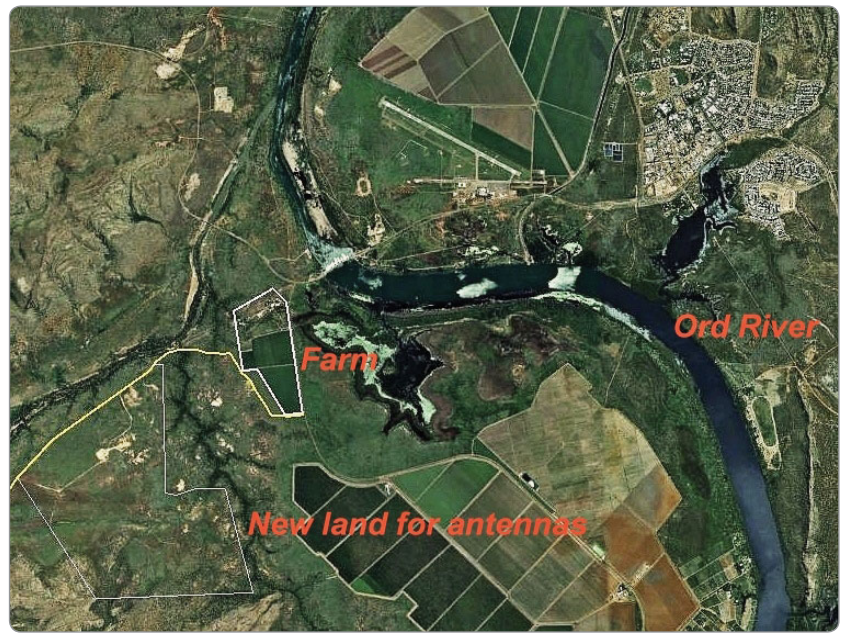

Photo 2: A satellite view of the HCJB farm and Lot 3000, the location of the new transmitter building and antennas. Kununurra township can be seen at top right.

Photo 3: Two of the temporary antennas on 40 metre towers.

This wasn't the end of HCJB as a shortwave broadcaster. Even in the internet and satellite era, shortwave has a large listener audience in the developing world. The BBC World Service estimates its African audience alone at well over 100 million, and many living in the Asian region are in very poor circumstances with no access to internet, satellites, or even local FM radio. Some governments censor the internet, and in places there is deep and sometimes violent political and religious intolerance which makes even local FM stations impossible. A cheap shortwave radio gets around this, and sometimes a single radio in a poor rural village is the only way villagers hear a Christian radio program in their own language. So, as operations wound down in Pifo, HCJB started developing shortwave broadcasting in our far north west.

Australians have long supported and worked in HCJB's South American ministry; one couple even set up a studio for program production on their farm property after working in Ecuador. Demand grew needing new studios, and a community church in Kilysth provided land for the construction of these in 1993.

Key people working with HCJB at that time believed God was calling them to establish a shortwave broadcasting facility here in Australia, which was a step of faith just like Clarence Jones's. They had no property, and prevailing government legislation prohibited private shortwave broadcasting. Despite this, they thought northern Australia had potential given that Radio Australia had (at the time) a big installation in Darwin. Then in 1997, a retired Christian couple offered HCJB a 250 hectare farm just six km from Kununurra in the east Kimberley. Just behind the farm, there was a flat plain of non-arable crown land (known as Lot 3000) suitable for big antennas, and HCJB leased this from the WA government in 1998.

Photo 4: The new transmitter building with workshop and staff accommodation facilities.

Expert assessment confirmed the farm site to be an excellent location for broadcasting into the Asia-Pacific region. It also came with workshop facilities, accommodation for volunteers working each year on the station construction, and room for permanent staff housing. Against all prevailing advice, and supported by prominent politicians, the Government amended the relevant Act of Parliament, and in April 2001 granted HCJB four international broadcasting licences on the proviso that transmissions commenced within two years. Photo (2) is a satellite view of the original farm and Lot 3000, the new antenna and transmitter site.

With the clock ticking, setting up of transmitting facilities began. HCJB design and build their own transmitters in the USA. Their standard unit (the HC100) is a 100 kW AM autotune transmitter that can be operated remotely, and has its own internal computer data management and fault monitoring system. These operate from 4.9 -22 MHz, and are entirely solid state save for the driver (4CX 3500A) and final (4CV100,000). Efficient amplitude modulation is provided via a 64 bit digital audio rate control of the final tube anode supply, avoiding the need for a conventional and less efficient linear modulator. The first of these transmitters was shipped from the USA in late 2002, and miraculously, was the last crate loaded before a major US dock strike, arriving just in time to meet the government deadline. Broadcasting began in January 2003, a second HC100 arrived in 2006, and a third is expected by 2015.

Operations started in a small building barely big enough for two transmitters, and used three temporary 40 metre towers and antennas. Two of these antennas were pairs of two element stacked Yagi's, and the third was a two element cubical quad, all aimed at major target reception areas in the South Pacific, Japan, Indonesia, China and India. But even in outback Australia you can't just put up 40 metre towers without asking, and the local Council refused permission for their erection! The matter went to the WA Appeals Board, a former Head of this Board offered to represent HCJB, and the Council's ruling was overturned. Photo 3 shows two of these towers one with a pair of Yagi's and the other with a two element cubical quad.

This initial setup had limitations, and sometimes struggled to compete with more powerful signals on the crowded shortwave broadcast bands, but work was already getting under way to develop Lot 3000 as the new transmission site, including a high performance antenna farm. A large transmitter building, seen in Photo 4, was constructed there

that included a generous workshop area, a transmitter hall capable of housing five HC100 transmitters, a control room, and accommodation for staff to live in for a week or two at a time. The creek crossing between the main farm and the new site can be 10 metres under water and impassable for days in a big wet season. The weather can be extreme!

The first new big antenna was assembled in 2009/10, a huge steerable dipole curtain array originally manufactured by TCI for the Croatian government in the 90s, but never erected! HCJB purchased it for a fraction of original cost, and it duly arrived in two 12.2 metre sea containers crammed with components and a very large assembly manual. It's an irony that what was purchased for a communist regime has ended up broadcasting the Christian Gospel.

This antenna hangs between two 90 metre high towers spaced 110 metres apart and consists of a 4 (V) X 4 (H) stack of 16 broadband dipoles that radiate the signal, and a mesh reflector curtain five metres behind it as seen in Photo 5, taken in 2010 before the feedlines and slew switch were installed. A slew switch allows the antenna feedpoint to be shifted either side of centre, thereby altering the direction of its radiation pattern +/- 30 degrees from the boresite position in 15 degree increments. The effective impedance of the antenna at its primary feedpoint is 150 Ω, which is transformed back to a standard balanced 300 Ω via a Tchebysheff transmission line tranformer. The gain of this monster is better than 20 dBi over its operating range, with a take-off angle of 10 degrees and a 3 dB horizontal beamwidth of 24 degrees in boresight position.

Assembling the feedlines and switching equipment was a massive task on an antenna rated to handle 500 kW; everything is big and the end result looks like a small oil refinery as can be seen in Photo 6. We checked out the TCI antenna with an ageing HP Vector Network Analyser, ex Radio Australia, that hadn't been fired up for years. Being configured for use with 50 or 75 Ω unbalanced coax, I had to cannibalise a ferrite toroid from my 4WD ham radio setup to make up a 6:1 balun to match with the 300 Ω antenna feedline. As can be seen in Photo 7, we set up the VNA on the back of a 4WD truck, took along another truck with a 240 V generator, and made a satisfactory set of impedance and VSWR measurements on the new antenna in sweaty 40 C heat.

Photo 5: The TCI curtain antenna prior to installation of feedlines and slew switch.

Photo 6: Slew switch and feedlines.

Photo 7: The author (left) and chief engineer Stephen Sutherland (right) checking the TCI antenna with a VNA.

HCJB makes use of a range of HF broadcasting frequencies, including the 16 metre and 19 metre bands that are well above the 11 MHz cutoff of the TCI antenna. So in 2011 work started on constructing four 80 metre towers for mounting three dipole curtain arrays designed and built at HCJB for use on the 19 and 25 metre bands, and with fixed orientation towards China, India and the South Pacific.

Most of the towers in the new antenna farm are ex-army. A set of military towers in Victoria were being dismantled and about to be sold for scrap, so HCJB negotiated their purchase, at scrap price! Supporters in the transport business organised getting the tower sections to Kununurra. The tower sections are generally a standard eight metres long, and galvanised, which allows the fabrication of new towers to any required height. It's the ultimate Meccano ® set! Tower construction starts with footings containing several tonnes of reinforced concrete set about three metres into the ground. Protruding from each footing is a central steel pin to locate the tower base, plus threaded studs on which a hinged jig can be bolted when raising the tower. A section of tower is bolted to the jig on the ground, and pulled vertical by crane or tractor. A longer tower section assembled on the ground is then bolted onto the jig at right angles to the first, and using the first vertical section, this is pulled through 90 degrees to vertical as shown in Photo 8. This is repeated until there is a pull tower about 30 metres high that can be used to raise the main tower. Then the main 80 metre tower can be fully assembled along the ground, and the challenge is to raise this with a tractor, a small crane on a truck, and an old 4WD Toyota utility.

Prior to raising, a set of guy wires are fitted to the tower and laid out ready to be fixed to appropriate concrete guy mounts. Wire ropes are rigged at intervals between the main tower and the pull tower, to prevent buckling when the main tower is raised. The actual pulling of the tower to a vertical position is

Photo 8: Pull tower and start of new 80 metre tower mounted on hinged raising jig.

done using a tractor with wire ropes and pulleys, and the Toyota utility acts as a counterweight using the compression of its diesel engine to stop the tower overshooting once it reaches its natural tipping point and to control the final tower positioning. Photo 9 shows an 80 metre tower being raised in this way.

Once vertical, the pull tower, now laying on the ground is dismantled, and the main tower detached from its hinged jig. The main force on the tower is now vertical compression, and the final task using a couple of truck jacks is to gently raise and manoeuvre the tower base onto its locating pin; not a task for the faint hearted!

The three sets of antennas seen in Photo 10 consist of two 4 (V) X 2 (H) broadband dipole curtain arrays aimed at India and China, and a 3 (V) X 1 (H) array aimed at the South Pacific, all hung between the four towers. The 4 X 2 arrays have gains of around 20 dBi, take-

Photo 9: 80 metre tower partly raised by pull tower and hinged jig.

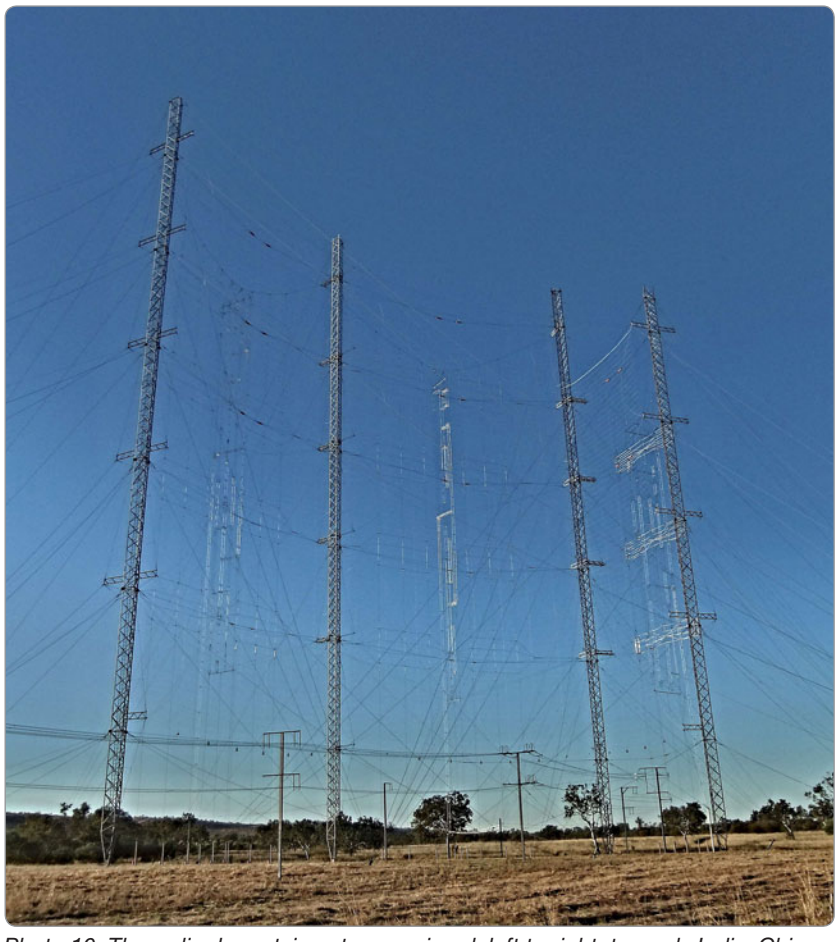

Photo 10: Three dipole curtain antennas aimed, left to right, towards India, China and the South Pacific.

off angles of six to seven degrees and horizontal beam widths of 35 to 50 degrees. The 3 X 1 South Pacific array has slightly lower gain, 17 dBi, and a higher take-off angle, 10 to 13 degrees, and much wider horizontal beam width, over 70 degrees. The reflector screens are located six metres behind the dipoles. Improvements in signal reports from the Asia-Pacific have been spectacular compared to the temporary antennas originally in use.

With these antennas in place, the transmitters were then moved to their new building as seen in Photo 11. A versatile antenna switching system was also installed in the roof of the new transmitter hall, as seen in Photo 12, using components dismantled at Pifo. This consists of 300 Ω open wire feedlines and electrically operated switches all contained within a maze of aluminium ducting, and it allows any transmitter to be connected with any antenna either by manual or computer control. This switching system will be extended when the third HC100 arrives in 2015. It will also have digital (DRM) capability. Much international shortwave broadcasting will shift to DRM in the next few years, allowing multiple programs on a single frequency, improved fidelity, and requiring far less power than AM.

With full remote antenna switching in place, it was possible to implement an automated transmitter control system. This allows transmitters to be activated, operating frequency and power levels set, and correct antennas to be selected, on the broadcast schedule for each day. Program is sourced and scheduling is undertaken in the Melbourne studios. Where needed, two or more transmitters can operate simultaneously. There is a comprehensive monitoring and alarm system which ensures that engineering staff are instantly alerted by mobile phone if problems or faults appear, which means that there is no longer anyone constantly tied up monitoring tasks in the control room.

In 2012, work also started on the construction of a high gain parabolic curtain antenna for use

Photo 11: Two HC100 transmitters installed in the transmitter hall.

Photo 12: Antenna feedline switcher in the roof above the transmitters.

on the 16 and 19 metre bands. This had previously been used in Pifo, and being parabolic, allows the placement of broadband dipole driven elements at different locations around the parabolic reflector screen to set the direction of the signal. There are actually two reflectors in this antenna. The big parabolic reflector curtain is suspended on seven 48 metre towers, all guyed to a central 128 metre tower, and there is a second much smaller inner curtain or corner reflector 14 metres of which is buried in the ground and nine metres is above ground supported on 16 small triangular towers. The aperture of this corner reflector is 106 degrees. The dipole driven elements are mounted close to the corner reflector so that the resultant radiated signal from this combination is then reflected by the large curtain. The driven elements are either a single broadband dipole or a pair of dipoles side by side. The end result is an antenna with (depending on frequency) a gain of 23 to 25 dBi, a take-off angle of six to seven degrees and a very narrow 3 dB horizontal beamwidth (depending on frequency) of nine to 16 degrees. This allows quite precise setting of signal coverage area. Photo 13 shows the parabolic antenna towers in the foreground prior to the installation of screens and dipoles, and gives a good aerial view of the entire antenna farm including the TCI curtain, and at the far end, the trio of dipole curtains described earlier. Photo 14 shows details of the above ground part of the corner screen and the dipoles with the three of the outer parabolic screen towers just visible.

In 2014, work will commence on the final antenna project at the present time. This is a pair of wire log periodic dipole arrays mounted side by side and fed out of phase to create a virtual slot antenna. Being log periodic arrays, they operate over a wide frequency range and cover the shortwave bands from 49 to 13 metres with a gain of around 15 dBi, a beamwidth of about 35 degrees, and a high takeoff angle of 20 to 23 degrees for shorter coverage up to about 1000 km from Kununurra.

Photo 13: Aerial view of the complete antenna farm with the parabolic curtain in the foreground, the TCI curtain midway, and the three dipole curtains at the top.

Photo 14: Corner reflector and dipole elements of the parabolic curtain antenna.

HCJB/Reach Beyond in Kununurra is over 80 years removed from its very modest South American start in 1931. Could Clarence Jones in 1920s Chicago have imagined his original vision would lead to a Christian shortwave broadcast station in outback Australia operating about eight hours a day in up to 25 languages? All of us involved in this project have seen God's hand at work every step of the way as we have taken part in an amazing journey that is helping to make Christ known in otherwise inaccessible parts of our sometimes dysfunctional planet. In concluding, special mention must be made of our very user-friendly chief engineer Stephen Sutherland, ex-HCJB Pifo, who with a lifetime of HF broadcast engineering experience, has overseen every aspect of the successful implementation of this great project.

You can learn more about HCJB/Reach Beyond at *http://www.hcjb.org.au/* and if you're an outback traveller, you'll be welcome at HCJB/Reach Beyond if you visit the Kununurra site, especially on Sunday afternoons when there are organised tours of the whole facility.

reach beyond Australia
formerly HCJB Australia

Broadcast Technician or Technical Officer

Reach Beyond is a respected, international, Not for Profit, Christian Radio Ministry broadcasting to the Asia Pacific region. We are seeking an experienced Broadcast Technician or Technical Officer with relevant qualifications and a keen understanding of shortwave transmitters to join our team at our international Broadcasting Facility in Kununurra, Western Australia.

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Solar Cycle 24

Ross Fraser VK2WN – President, Orana Region Amateur Radio Club

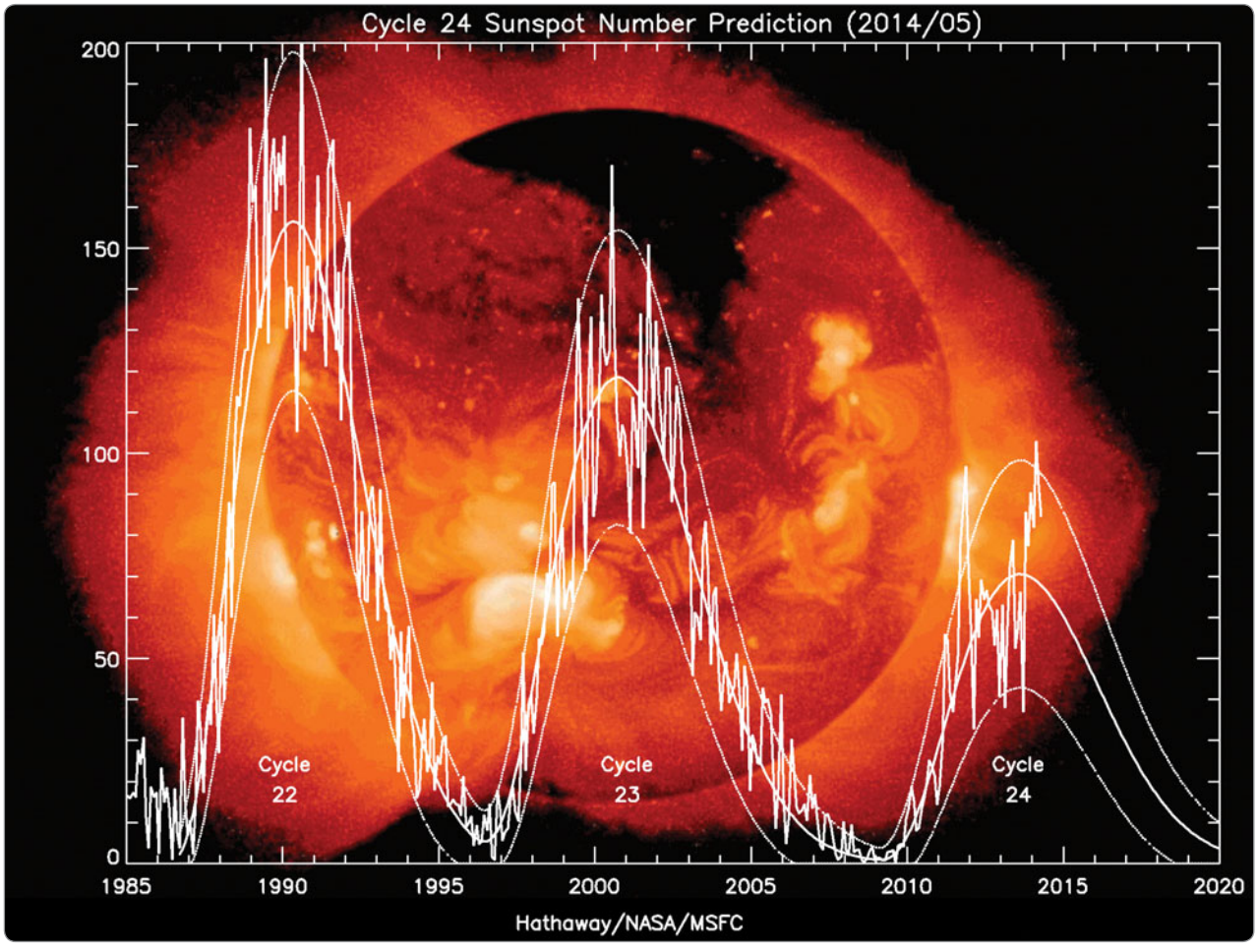
This article is based on presentation that I made at the Veteran's Centre, Dubbo on Thursday 28 March, 2013.

The Sun is always active, at its core, constantly converting hydrogen to helium which results in the production of light that we see and the heat that we feel. On its surface, the Sun goes through periods of high activity and periods of low activity. It is these periodic variations of activity which correspond to an approximate 11 year cycle which we now know as the solar cycle – reference Figure 1. In reality the actual solar cycle can vary between nine and 14 years! For amateur radio operators, the peak of the solar cycle means that the high-frequency (HF) portion of the amateur bands is likely to see a significant improvement, and greater reliability, in long-distance (DX) communications.

So why then is the current solar cycle called Solar Cycle 24? This is because an astronomer known as Wolf, and others, discovered that the Sun had clearly definable periods of sunspot activity. The first identified solar cycle was from 1755 to 1766 and there has been an 11 year solar cycle, more-or-less, observed ever since which leads us to the current cycle which is number 24.

At the peak of the solar cycle there are a large number of sunspots visible on the surface of the Sun. These sunspots correspond to bursts of magnetic activity which create solar winds, made up of charged particles, which after a few days end up making

Solar Cycle 23, completed and Solar Cycle 24, measured and predicted. (Reference: http://solarscience.msfc.nasa.gov/predict.shtml) Note: To get the above image, go to the referred website and click on image for larger version.



contact with our planet. These solar winds, in fact, interact with the earth's magnetosphere because the earth is, actually, a giant magnet! This produces a number of effects. One of the effects is a colourful light display in the upper atmosphere. This is known, for us in the southern hemisphere, as Aurora Australis (the southern lights). In the northern hemisphere these colourful lights in the sky are known as Aurora Borealis (the northern lights). Another effect, as stated before, is a significant improvement in long-distance (DX) communication in the HF portion of the amateur bands.

The Sun has recently passed the most active part of its solar cycle. This is known as sunspot maxima. The actual sunspot maximum was predicted to be in September 2013 but a recent article (Reference 1) suggests that there may be another peak in 2015. If Solar Cycle 24 has a double peak, as suggested, then this would be highly unusual and will, most likely, lead to an even greater improvement in HF propagation and for much longer than usual.

It's time to get operating!

References

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Attend

GippsTech 2014

Registrations close 4 July

12 - 13 July

AMSAT-VK

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About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial amateur radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft. AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net
Australian National Satellite net

The net takes place on the 2nd Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. Check-in starts 10 minutes prior to the start time. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales
VK2RBM Blue Mountains repeater on 147.050 MHz

In Queensland
VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

In South Australia
VK5TRM, Loxton on 147.175 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, EchoLink node 399996

In Tasmania
VK7RTV Gawler 6 metre repeater 53.775 MHz IRLP node 6124
VK7RTV Gawler 2 metre repeater 146.775 MHz IRLP node 6616

In the Northern Territory
VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT or VK3JED conferences. Past experience has shown that the VK3JED server offers clearer audio. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night. Currently only SO-50 is available.

Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

DX-News & Views

Luke Steele VK3HJ
e *vk3hj@wia.org.au*

May on the bands

In the first half of May, the solar indices looked quite promising, with the 10 cm solar flux peaking above 160 in the second week, but it dropped to around 100 by the end of the month. There were a few days of geomagnetic disturbances, but no particularly significant flares occurred. June looks like it will show declining solar flux indices, around 100.

In a presentation by Carl Luetzelschwab K9LA in late April, he said that evidence is suggesting we may enter another 'grand solar minimum', or an extended period of low sunspot activity. He said 'It sure looks like something inside the sun changed around the peak of Cycle 23' and that several weak cycles may lie ahead. It will take another decade of good solar data to gain a better picture of what may lie ahead.

In the meantime, make the best of any higher band propagation we may get. This coming spring and summer should see the higher bands pick up again, but we may not see the reasonable conditions of the past two summers again for some time.

The higher bands have been poor lately, but 15 and 17 m have shown some activity. 20 m remains strong, with good openings mid-afternoon on long path to Europe, and short path into North America into the evening. There has been little activity on 80 and 160 m, with weak openings at best into north and South America in the evening. 40 and 30 m still offer some good DX most days.

With winter upon us, the HF bands also seem to cool off. North American stations also report 'summer doldrums'. It is interesting how this quiet season is coincident rather than reciprocal.

Mike RI1ANT at the Russian Mirny Antarctic base is on just about daily, on all bands. There has been plenty of activity in Africa; in Malawi, there has been 7Q7VW, then 7QNL, and 7Q7GUI. Joe 7Q7BP is resident in Malawi, and is on from time to time, mainly CW. Arno DL1CW was 9G5ZZ in Ghana. The club station of the Sahrawi Amateur Radio Union S01WS has been on air just about daily. Also in Africa Gerard ZS6AYU was on air as A25GF in Botswana, then Z21GF in Zimbabwe. Vlad UA4HBW has been on air from Surinam as PZ5VB, then /ZP9 in Paraguay. Masa JA0RQV was on air from Niuatoputapu Island, Tonga as A35JP/p. The YW0A Aves Island DXpedition was postponed, and at the time of writing, the team was still awaiting new dates from the Venezuelan Navy for travel to the island.

A number of special callsigns were active in early June for the 70th anniversary of the 'D-Day' landings on the beaches of Normandy, France.

Whilst there are few DXpeditions happening mid-year, there are many IOTA activations, and so far there have been a number of European islands on the air, as well as several Indonesian islands.

D0A and 1C4M have been 'protest callsigns' claiming to be

Some upcoming DX operations

The following table summarises some of the DX activations that may be of interest to VK operators.

Date	Call	QSL via	Information
1 – 2 July	3D2ML	RM2A	Fiji, Beachcomber I (OC-121). RM2A, HF, CW, SSB.
3 – 7 July	5W0ML	RM2A	Samoa, Upolu I (OC-097). RM2A, HF, CW, SSB.
5 – 15 July	FP/KV1J	LotW	Miquelon I (NA-032). KV1J, 80 – 6 m, SSB, CW, RTTY.
7 – 17 July	TO5MJ	LotW	Guadeloupe (NA-102). F5LMJ, 40 – 10 m, CW, SSB, Digital.
8 – 11 July	GJ/WJ2O/m	LotW	Jersey (EU-013). WJ2O.
8 – 12 July	3D2ML	RM2A	Fiji, Nanuya Balavu I (OC-156). RM2A, HF, CW, SSB.
12 – 15 July	GU/WJ2O/m	LotW	Guernsey (EU-114). WJ2O. QRV for IARU contest.
13 – July	3D2ML	RM2A	Fiji, Viti Levu (OC-016). RM2A, HF, CW, SSB.
26 – 27 July			RSGB IOTA contest.
29 July – 2 August	VK9EC	LotW	Cocos-Keeling Is (OC-003). JA3FVJ, JA3QWN, JA3TJA, JF3PLF, JH3FUK. 160 – 6 m, SSB, FM, CW, RTTY, PSK31.

operating from the self-proclaimed 'Republic of Donetsk' in the troubled region within Ukraine. Neither the 'republic' nor the callsigns are recognised by international conventions, but reflect a changing political landscape.

The WIA Awards Committee has re-activated the 'DXer of the Year' awards. At the WIA AGM convention, awards were presented for the 2013 year. Congratulations to David VK3EW, who won the overall DXCC, Open and Phone sections, David VK5DG who won the Digital section, and your author Luke VK3HJ who won the CW section.

Your author Luke VK3HJ was also pleased to recently achieve DXCC with 100 countries worked and confirmed on 160 m, to make nine bands DXCC, and to make the highest score for Oceania in the CQ DX Marathon for 2013, with a score of 319, for 279 countries and all 40 CQ zones worked last year.

3D2ML, Fiji/5W0ML Samoa. Dmitry RM2A will be activating Beachcomber Island, Fiji, then Upolu Island, Samoa, then back to the Fijian Islands Nanuya, Balavu and Viti Levu. He plans CW and SSB operations on HF. QSL via RM2A.

FP/KV1J, Saint Pierre et Miquelon. Eric KV1J will return to Miquelon Island, operating on 80 – 6 m, SSB, CW and RTTY. This entity is not particularly easy to work from this part of the world, so good luck! For more information see *http://www.kv1j.com/fp/July14.html*

TO5MJ, Guadeloupe. Alain F5LMJ plans ten days of operations from 40 – 10 m on CW, SSB and digital modes.

GJ/ Jersey and GU/WJ2O Guernsey. David plans a short activity from Jersey before operating in the IARU contest from Guernsey.

RSGB IOTA contest. Look for lots of interesting activity from many islands, many of which are DX entities also. Most contesters will also be active before and after the contest weekend of 26/27 July.

VK9EC, Cocos-Keeling. A group of five Japanese operators plan activity on 160 – 6 m, multiple modes, in a holiday-style operation. After Cocos-Keeling, they plan to activate Christmas Island. For more information see *http://vk9.nobody.jp/*

Special thanks to the authors of The Daily DX, 425 DX News, DX World, NG3K's Announced DX Operations, and QRZ.DX for information appearing in this month's column. Interested readers can obtain a free two week trial of The Daily DX from *www.dailydx.com/trial.htm*

Silent Key

Terence (Terry) Robert Ryeland VK2UX

Terry Ryeland passed away in Nepean Hospital in the early hours of Monday morning, November 11, 2013, after a short illness.

While Terry had numerous hats to wear, among them cricket, baseball, lawn bowls and the New South Wales Rural Fire Service, along with his family amateur radio was one of his great passions. Terry would often speak of his family, Janice, his wife of over 50 years, son Matthew and the idol of his life, daughter Bronwyn.

His interest in radio started when his father would listen to baseball games on shortwave radio from the USA. He built his first crystal set at the age of 12, progressing to a two valve receiver some short time later. He would often cycle to a nearby radio 'ham' and be overwhelmed by the fact that his friend could talk to people all over the world. This led to him becoming a 'ham' himself.

Terry, along with other prospective amateurs, attended classes under the tuition of Rex Black VK2YA (SK). He was allocated the call sign of VK2ZMR after being successful with his AOLCP exams. He then progressed

to a Novice call, VK2NER and then subsequently, VK2BRQ. He applied for and got VK2UX a few years later.

He was given life membership of the Blue Mountains Amateur Radio Club in 1992 for his dedication as Education Officer, and at one time as President. For his dedication to communications, he was made a life member of the Group Support Brigade of the NSW Rural Fire Service (Blue Mountains area).

A doyen of amateur radio, his knowledge on matters radio, and his involvement with both Amateur Radio New South Wales and the Blue Mountains Amateur Radio Club, was extensive. He was awarded life membership of ARNSW in June 2013 at the AGM, and was re-elected as President.

Education was Terry's forte, with a friendly and informative attitude which he adopted when training, his students were made to feel relaxed, enabling him to get the best from them. His belief was to educate in a simple but constructive form from which the hobby of amateur radio would grow. Keen to see the Foundation licence introduced, he was instrumental, along with others in seeing it come to fruition.

He was a lover of classical music and told his family and friends he wanted to 'go out with a bang' and that he did. His choice of Richard Wagner's 'Ride of the Valkyries' was for the beginning of the service, and the final movement from Peter Tchaikovsky's 1812 overture with cannons, for the conclusion of the service! As a final farewell, a brief message in CW was sent by Trevor VK2TM.

The trademark bright smile and the raised eyebrows when you knew you had his undivided attention will be sadly missed by many. Terry is survived by his XYL Janice, son Matthew, and daughter Bronwyn. Vale Terry VK2UX.

Contributed by Daniel Clift VK2DC.

Spotlight on **SWLing**

Robin Harwood VK7RH
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This autumn has been mild and indications are that winter may not be as cold as previously predicted. I have had only a few frosts so far which is somewhat unusual for Launceston. We shall find out over the coming weeks what the temperatures will be. Ironically they closed the Launceston Met Office at the end of May with forecasts and information now coming from the bureau in Hobart.

I have not been doing much monitoring over May and instead have been reading e-books off the net. The bands are not as active as they were 12 months ago. There has been intense speculation that Radio Australia may be closing in August or September as a result of the Federal Budget early in May. The Foreign Minister is on record as saying that the external television service, operated by the ABC, was no longer required. Radio Australia is organisationally part of Australian Television and thus would share the same fate. I may have more information on this in the August column.

There was a military coup in Thailand in the third week of May, following months of political instability following the elections earlier in the year. The military seized control of all broadcasting outlets including the transmitters of the BBC and VOA in Thailand, although they did not interfere with programming on the latter. Domestic broadcasts however were commandeered and ended up airing a common program including Thailand's external service HSK9.

The situation in Ukraine continued throughout May and tensions remain high between Moscow and Kiev. The flashpoint seems to be the Donetsk region in the Russian speaking eastern Ukraine. Kiev has now elected a new president whilst the Donetsk region has proclaimed its independence from the Ukraine and still wishes to be part of the Russian Federation.

I am still hearing the Sevastopol Naval base in the Crimea on shortwave and other monitors are reporting hearing intense HF activity from Russian defence communications. Apparently 8816 is one duplex channel which is active around the clock with Russian Naval air communications in CW. In fact CW seems to be the main operational system employed by the Russians. They do have RTTY systems operational yet are rarely heard in voice modes. NATO including the US relies heavily on the digital STANAG mode which sounds like a loud rushing noise. Australia also uses this. STANAG is heavily encrypted although I believe that some form of identification must be sent.

WAVERLEY AMATEUR RADIO SOCIETY

Auction of Radio and Electronic Equipment.
Saturday, 5th July 2014
at
The Scout Hall, Vickery Avenue, ROSE BAY, NSW 2029

All are welcome to attend this annual event to buy or sell. Entry is only $2 and there is plenty of free parking nearby. The club is adjacent to Lyne Park and Sydney Harbour. Doors open at 8:30 am and the auction commences at 10:00. Full details, including pictures of some of the items to be sold, can be found on the club's web site at www.vk2bv.org.

Contact: Raffy, VK2RF. Email: treasurer@vk2bv.org

SOTA News

Allen Harvie VK3HRA and Bernard Petherbridge VK3AMB

May saw the much-anticipated release of the latest limited batch of the Mountain Topper Radio (MTR) by Steven Weber KD1JV. Due to the size and mass, these devices are sought after by SOTA activators. At least five MTR v2 devices made it to VK and are now in various states of build. This will add support to the existing band of SOTA CW operators as well as encourage CW skills in Chasers.

May started with a team of Gippsland activators out and about in the hills. Rob VK3EK, John VK3MGZ, Peter VK3PF, Mike VK3XL and Ron VK3HAK, together with some additional family and friends, were based at Mount Hotham for the first weekend in May. Unfortunately, the weather put early plans into the rubbish bin. Mike, Peter and Rob did manage to activate some summits on the Friday, despite the high winds, rain and low cloud.

The team gathered at a lodge at Mount Hotham on Friday afternoon to plan Saturday's activities. Final decisions for Saturday were delayed until after breakfast with cloud and strong winds still evident, and around six cm of snow on the ground. The team decided to head for some lower summits to the east. Mike and Ron headed to Mount Sam, Rob to Mount Livingstone and Peter and John to Mount Phipps. After brief activations and several S2S contacts, the team headed on towards the next summit: Peter and John to Mount Birregun, Rob to Mount Phipps, and Mike and Ron to Mount Livingstone. Some chasers appeared to be desperate, despite advice on-air that the summit would be activated again in the near future. Once on the new summit, each team worked chasers until after they had again worked S2S with the other teams, then they moved on again. By mid-afternoon, all three teams had activated all three summits, and hopefully met all Chaser demand, before heading back to base at Mount Hotham.

On Sunday, the team split up and headed for home. Mike started with a brief activation of Mount Hotham, before heading to the lower summits of Mount Baldhead and Mount Delusion. Rob headed for VK3/VG-036 and then Mount Delusion. Peter headed to Mount Nugong and then Mt Nunniong, then went on to activate Brumby Hill and Mount Pendergast. Several S2S contacts were made, including activators further afield.

As you can see, strategy planning is making its way into SOTA activations.

May was also the month for OS activations. Wayne (W3/VK3WAM/p, W4/VK3WAM/p, W6/VK3WAM/p and W8/VK3WAM/p) is again leading the charge with 13 W summits. Tony F/VK3CAT/P activated two (F/MC-101 & F/AB-468) F summits whilst Fred VK9DAC (VK3DAC) activated VK9/NO-001 on Norfolk Island between bird watching sessions.

Ron VK3AFW combined his trip to the WIA annual conference with some VK4 activations.

Several other activators were out and about, adding to the fun for both Activators and Chasers. Chasers are encouraging Activators to keep trying different bands supporting cross-country contacts. We are also seeing continued late afternoon activations in an attempt to make DX contacts into Europe with Ed DD5LP (VK2JI) activating and looking for VK contacts from Europe. The reflectors are seeing discussion about the best way to increase the probability of contacts into North America.

We should note that the activity levels were high across eastern Australia, as shown by Amanda VK3FQSO. Having started chasing SOTA Activators in early January, Amanda reached Shack Sloth status (1000 Chaser points) by the end of March, as reported last month. By late May, she had notched up the next 1000 points as a Chaser! This achievement is only possible due to the increased number of Activations.

Winter is upon us and so will be the bonus period

Readers will be aware that each summit earns the Activator and Chaser a score, which is related to the height of the summit above sea level (asl). With winter comes the bonus period where, in some Associations, a seasonal bonus of three points is offered for selected summits. The bonus points apply only to the Activator, not the Chaser.

Bonus points are based on elevation, with higher elevations gaining the bonus. Whilst there are several summits that qualify for the bonus points with good access, the weather and conditions during an Australian winter can't be discounted and extra care must be taken when activating remote summits.

Not all associations have a bonus period (for instance there are none in VK4, VK5, VK8 and VK9) and not all summits qualify.

VK1 has a bonus period from 15 June to 14 October. During this period an additional three points is available for summits greater than 1200 metres asl. Due to the banding of the summits, the bonus is valid for summits ranging from two points to 10. This leaves an interesting situation where an activator can activate a summit with a value of two in the summer period, then can activate the same summit again

in the same year during the bonus period and claim the three winter bonus points only.

VK2 has different periods for different regions, 15 June to 14 October for CT, SC, SM, ST, SW and 1 July to 31 August for CW, HU, MN, NT and NW. Three bonus points are available for summits greater than 1200 metres which, due to the banding, are summits with points of eight and 10.

VK3 has a single period being 15 June to 14 October where an additional three points are available for summits greater than 1200 metres asl. Due to the banding this is for summits with points of eight and 10.

The bonus period rationale is to reward the effort in activating high peaks in harsh conditions. These peaks are subject to snow and ice, high winds, and in many cases have road closures adding significantly to summit remoteness. It is essential to ensure that you are well informed and prepared with suitable clothing, safety equipment, summit weather and other general advice needed before venturing out onto the mountains. Particular care should be taken, and attention given to, the local weather forecast, as conditions can change rapidly at such elevations.

Work on the checking of candidate summits is continuing in VK7, and the VK6 summit initial survey is in progress, so expect more summits to be available soon.

Exploit the bonus period over winter but as always stay safe.

SSTV & successful Summit to Summit on PSK

Mark Withers VK3ASC reports:

On the afternoon of May 31, I had some time to do a quick activation and experiment with PSK and SSTV.

On 30 metres on PSK31, after a few CQ transmissions I made contact with Gerard VK2IO. Both our signal strengths varied between 5-8 to 5-9+ really good sold PSK Signals.

Soon after, I placed a spot for SSTV on SOTA watch and transmitted a photo from top of the summit taken from my phone.

The app used was DroidSSTV with the wolphilink interface to my FT-817ND.

The images were received by Matt VK2DAG and Bernard VK2IO. Matt has posted the images on his blog *http://www.vk2dag.com/blog/* for all to see.

After seeing a spot Alert come up informing that Compton VK2HRX was moving to 7.035 MHz for PSK, I moved down and monitored the frequency and put out a few CQs. After receiving VK2HRX CQs, we made contact. Again we had really strong PSK signals between us. This was my first summit to summit contact on PSK. I also made contact with Mark VK1EM just off frequency from VK2HRX; again we had a really good strong contact considering I was getting static crashes from the change of weather. It started to rain and we packed up and made tracks back to the 4x4.

Apologies to the chasers on 40 metres who may have been waiting for a SSB contact, we had to pack up due to the sudden change in the weather.

I am looking forward to many more PSK and SSTV activations.

VK5news Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

The May meeting was quite short as the lecturer organized for the evening had to cancel at the last moment. Nevertheless Paul VK5PAS gave us a very good presentation about the Summits of the Air Award and some of the people who have 'gone to the hills' and about the National Parks awards with information about the location of parks and those who have used them. This time the computer and projector communicated as they had not done on a couple of previous occasions, so the talk and pictures were very well accepted.

The AHARS website is in the process of being updated. Please have a look at it and offer any comments you care to make, as they can help the committee and the webmaster in many ways. Both good comments and bad comments help.

The history of the club as gathered by Lloyd Butler VK5BA will be re-instated along with the talk by one of our foundation members, Gordon VK5GR about that early club; this is already there at the time of writing.

Activities at the Shack are on-going with several 'Back to Basics' talks about resistors and capacitors and the like. The Shack is open every Saturday morning for coffee and chats on the alternate weeks when there are no lectures. There will be another Foundation course very soon. Contact Paul VK5PH for more details.

AHARS general meetings are held on the third Thursday of each month in the Blackwood Community Centre, Main Road, Blackwood. All welcome. The meetings start at 7.30 pm.

Contests

James Fleming VK4TJF

This month's contest column comes to you from Detroit, Michigan in the United Sates where I'm visiting family, having attended the Dayton Hamvention in late May. A day before the Hamvention yours truly graduated from this year's Contest University. And all I can say is that it is well worth the travel to attend one of these. Even if you cannot attend the Contest University in Dayton, I noticed that they have a live internet feed and also there are some videos freely available from *http://www.contestuniversity.com*

Two contests that I think will be a lot of fun this month is the IARU HF World Championships and the RSGB IOTA contest.

The IARU HF World Championship contest is on the 12th and 13th of July and runs from 1200Z to 1200Z, lasting a 24 hour period. The goal is to contact as many amateurs worldwide especially the IARU member society HQ stations. As a single operator you can do phone, CW, or mixed mode, and operate either QRP, high or low power levels. Or the other classification is multi-operator, single transmitter mixed mode. The contest exchange for the IARU member society HQ stations is a signal report and official IARU member society abbreviation. All other stations send signal report and ITU zone. The same station may be worked once per mode per band for QSO credit. When you contact your own ITU zone, or any IARU-member society HQ station or IARU official (counting as the special multiplier), it is counted as a point each. When contacting a station in the same ITU zone but on a different continent it counts one point. Contacts within your continent (but different ITU zone) count three points, and contacts with a different continent and IARU zone count five points. The multipliers are the ITU zones plus IARU member society HQ stations. Entries sent as attachments to email must be sent to *IARUHF@iaru.org* It is easy to download and install the free N1MM contest logger and when the contest is finished it can create a Cabrillo file that can be sent electronically. In addition to the contest this year there is the World Radio Sport Team championship that will have 59 teams located on the east coast of the United States near Boston also operating in the IARU HF contest. There are many and varied awards and prizes for contacting these teams and participating in this event. So it is like a contest within a contest. The one catch is that you must submit your log within six hours from the end of the contest. Be sure to check out *http://www.wrtc2014.org/competition/participation-awards/* to see all the activity and participation awards that you can get for contacting these stations.

Australia being its own island and IOTA, OC-001, what better way is there to celebrate as participating in the RSGB IOTA contest? The contest goes from 1200Z on 26th July to 1200Z on 27th July. Bands are 3.5, 7, 14, 21, and 28 MHz, CW and SSB. Categories are either an island station or world station. Operators can be either single operator, single operator assisted, or island multi operator with 24 hour mixed mode only. Operating time for single operator can be either 12 hours or 24 hours. Single operators can run either QRP, low or high power. Island stations may, additionally, indicate that they are a DXpedition station and compete for a range of expedition trophies and certificates. All entrants can count any one for a QSO point, island or world station. Island stations contacting world stations is worth five points, island stations with the same IOTA reference is five points, and other island stations 15 points. World stations that contact other world stations get two points and netting island stations gets them 15 points. Multipliers are the IOTA references. Email logs in Cabrillo format to *iota.logs@rsgbcc.org*

I will leave with a couple of contesting tidbits. Contesting is the only sport when contacts with competitors are both rapid and furious. Contesting is also the only sport when sharing information with your competitors is not only required but encouraged.

Contest Calendar for July 2014 - September 2014

Month	Date	Starts at	Spans	Name	Mode
July	5th - 6th	1100 UTC	24 hours	DL-DX RTTY contest	RTTY
	12th - 13th	1200 UTC	24 hours	IARU HF World Championship	CW/SSB
	19th - 20th	1200 UTC	24 hours	DMC RTTY contest	RTTY
	26th - 27th	1200 UTC	24 hours	RSGB IOTA contest	CW/SSB
August	2nd	0000 UTC	24 hours	TARA Grid Dip Shindig contest	RTTY/PSK63
	2nd - 3rd	0001 UTC	48 hours	10-10 International Summer contest	SSB
	9th - 10th	0000 UTC	48 hours	Worked All Europe contest	CW
	16th - 17th	**0300 UTC**	**24 hours**	**Remembrance Day contest**	**CW/Phone/RTTY/Mixed**
	30th - 31st	**0400 UTC**	**20 hours**	**ALARA contest (10 hours each day)**	**CW/SSB**
September	6th - 7th	0000 UTC	48 hours	All Asian DX contest	SSB
	13th - 14th	0000 UTC	48 hours	Worked All Europe DX contest	SSB
	20th - 21st	1200 UTC	24 hours	Scandanavian Activity contest	CW
	27th - 28th	0000 UTC	48 hours	CQ WW DX contest	RTTY

Rules for most contests may be found at *www.hornucopia.com*, courtesy of WA7BNM.

VHF/UHF - An Expanding World

David Smith VK3HZ
e *vk3hz@wia.org.au*

Weak Signal

This month, I thought I'd turn the Weak Signal section over to Alan VK3XPD. Alan and I recently completed some VK record-breaking contacts on the 78 GHz band using equipment built by Alan. He has done an excellent job with both the equipment and the write-up of the contacts so, over to him:

78 GHz in VK – new distance records

To date, unlike Europe, the activity on our 76/78 GHz amateur segment in Australia has been in its infancy meaning that activity is a bit sparse. It's perhaps not surprising with the obvious technical challenges, the limited availability of hardware and of course the $ costs. Aside from my homebrew equipment, I'm aware of a few VK2 amateurs who are building gear but I'm unsure if there have been any (other) successful QSO's claimed.

My 78 GHz gear is based on the popular DB6NT hardware. I'm not currently on the usual 76032.1 MHz call frequency because I did not have a suitable LO to get me there. Besides, we have secondary access all the way up to 81 GHz.

The critical element, an OCXO-locked 13.03 GHz source is tripled to 39.09 GHz at circa +20 dBm and it pumps a single diode (mixer) on a small PCB within a purpose-built metal housing. The 78.18 GHz LO is then mixed with a 432.1 MHz IF signal of about +7 dBm or five milliwatts. The output from this 'bare' mixer is a double sideband signal (DSB) at circa -1 dBm.

This relatively standard mixer hardware format is in fact a complete 76/78 GHz transverter. Then you couple the RF via waveguide to a small splashplate-fed dish/reflector or simply mount a horn on the waveguide aperture. In average conditions, with this 'bare' mixer one can expect to achieve QSO's out to 20 km or more. I'm hoping to inspire some of you enthusiasts out there to build up gear like this and get onto this band.

So then…QRZ on 76/78 GHz?

Around the time I was collecting parts for my two transverters (there's no point building only one unit because who will I work with?) I became aware that Tom Williams WA1MBA was doing a small production run of moderate cost 76 GHz LNAs for amateur radio operators worldwide. Subsequently, I purchased two units to incorporate into my transverters.

To integrate an amplifier requires additional RF componentry. Firstly, I select the LSB of 77749.90 MHz with a homebrew three-screw waveguide filter. This filter works best at passing the LSB and attenuating the LO and USB each by circa 20 dB. The filter's insertion loss of around 10 dB is quite high but it's not a problem. The LNA has a gain of circa 28 dB and a Psat of +10 dBm. So, it can be used as a power amplifier too!

To achieve this requires a four-port waveguide switch (WR-15) to reverse the LNA on RX and turn it into PA on TX. The transverter is coupled via this four-port waveguide switch to a 300 mm dish with integrated Cassegrain sub-reflector. The latter makes it very easy to illuminate the dish.

The current VK 78 GHz SSB distance record of circa 32 km was set in December, 2013 down at Port Fairy with Russell VK3ZQB as the other operator. Signal reports were huge at 5+9 plus 20 over! Interestingly, the current world SSB record is 252 km set over an ideal path in the northern California desert by USA amateurs.

During recent testing on the bench, I was monitoring the

Photo 1: 10 GHz dish 'pointing' the way for 78 GHz.

frequency stability of my gear on both 47 GHz and 78 GHz. I found the 47 GHz gear was always well within one kHz of where it should be. It was adequate for SSB albeit with some on-going thermal drift up/down - depending on local ambient temperature and breezes.

However, to my surprise I found the 78 GHz gear with its OCXO Reference had 'single Hertz' drift after about an hour of warm-up. This exceptional frequency stability immediately opens the door to the wonderful digital modes of WSJT.

After some discussions regarding the possibilities with David VK3HZ we decided to try extending the current 78 GHz national record on SSB. There was no digital record at the time.

As part of the planning for this activity, we firstly needed to identify suitable line of sight (LOS) paths. The reason - unlike the lower microwave bands (10 GHz and down) where ducting propagation allows signals to travel well beyond the visual horizon - it has been found that 78 GHz signals do not travel well in an 'Over the Horizon' scenario due to very high path losses. This means we need high vantage points that can 'see' beyond the normal visual horizon. Another factor is the relative humidity. Again, 78 GHz signals are degraded by high atmospheric losses due to high humidity whereas 10 GHz and down often benefit from periods of warm conditions with high humidity.

Now you may think it would be easy to find longish LOS paths in VK. Unfortunately, we've found that is not the case. Our terrain in VK may have quite a few high mountain ranges. However, we found that many of these ranges tend to block each other from 'seeing' distant vantage points. And then there are the ever present obstructive trees that block our views and the locked gates and 'Walking tracks only'...that deny us vehicular access to many desirable summits.

After many hours of poring over the maps of VK3 looking for clear unobstructed path profiles, we finally

Photo 2: Set up at Rockbank.

settled on the popular tourism site at the Mt Dandenong Observatory. This site provides excellent views to successively longer LOS paths west towards Ballarat. David would operate from this site but unfortunately he would also endure the questions from many 'visitors' that frequent this popular lookout - a small price to pay for such a prominent location I guess?

Another part of our planning for the longer non-visible paths (due smoke haze and so on) was to use 10 GHz as both FM liaison and as an indicator of the bearing we needed for 'pointing' the 78 GHz dish. The 300 mm dishes used have circa 45 dBi gain, so dish pointing and alignment accuracy is absolutely critical due to the extremely narrow beamwidth.

Unfortunately, we failed to acknowledge our past experiences in this plan. On 10 GHz, there are usually numerous signal reflections from many different directions over circa 100 km paths. This caused us some confusion and much frustration with our pointing efforts. It was especially problematic over the longer (for 78 GHz) paths. Even though I had modified my 10 GHz transverter to deliver a mere one milliwatt my signals at David's site were still crushingly strong. I still had to 'off point' my dish to achieve a noisy FM signal at David's end for him to optimise on, that is, adjust his pointing for best FM quietening! Next time we will use 24 GHz for this function because this band is very much more LOS and not so susceptible to reflections.

And so on a fine sunny May 13th, I drove to my first spot west of Melbourne near Mt Cottrell, south of Rockbank. This 64 kilometre path has a stunning view of the Melbourne CBD with the Dandenong Ranges easily visible beyond. The 10 GHz liaison was not necessary due the visual we had but we set up regardless to test our gear.

On 78 GHz we immediately 'found' each other and after minor

dish pointing tweaks, we achieved 57/58 reports on SSB. A 'bare mixer' attempt yielded weak SSB signals - not quite loud enough to complete a QSO. So we then set up for WSJT on JT65C. A 'bare mixer' digital QSO was quickly completed with reports of -14 dB both ways. There was no real point repeating this QSO with the LNA/PA combo activated. So, two new 78 GHz records over this 64 km path were achieved.

I then relocated further west to a spot on the Pentland Hills Rd near Myrniong. The Dandenong Ranges were visible but hazy over this LOS path of circa 90 km. At 1315 hrs (local) we completed our SSB QSO with 53/52 reports. We then quickly completed the digital QSO. This time, the LNA/PA in circuit yielded very loud signals with some noticeable QSB. So, another two distance records were set/extended.

The next spot we had identified as a 'possible' was near Gordon. However, on arriving I found it was not as good as hoped so I continued on towards Mt Buninyong, south of Ballarat. A geographic embarrassment meant I drove to the nearer Mt Warrenheip instead of Mt Buninyong. After a quick drive to the more southerly Mt Buninyong, I set up on the tourist road that runs along the eastern rim of the mount.

At circa 1515 hours, I had a beautiful clear view to the horizon between the gaps in the large trees. The Mt Dandenong Ranges, 127 km to the east, were not visible to me so using the 10 GHz liaison hardware we quickly had our bearings sorted.

We had expected the SSB signals to be much weaker over this longer path so for this QSO we decided to use the benefits of WSJT's 'weak signal' capabilities to 'find' and optimise the dish pointing. To achieve this, we each in turn radiated the 1270 Hertz sync tone and adjusted the dishes for the strongest visible signals. We quickly completed an easily audible -8 dB WSJT QSO. Our SSB QSO was as expected fairly weak but quite readable at 51 both ways.

So, at the end of this very productive day, we had set/extended the VK 78 GHz SSB and digital record three times out to a maximum path of some 127 km!

But wait – there's more!

Over the previous couple of weeks, I had been in discussions with various people seeking access to the Mt William summit. A day earlier, this access was finally granted and so we immediately

Photo 3: The view from Mt Buninyong.

planned for a longer shot from Mt William to a site near Colac.

On May 15th, with a warm, bright and sunny sky and high-ish humidity, the type of conditions that are not ideal for 78 GHz propagation, we achieved our longest distance yet of 139.8 km - firstly on digital WSJT/JT65C with -10/-12 reports. After refining our dish pointing, we then completed on SSB with marginal 4+1 reports both ways.

With better and more appropriate weather conditions, we believe there are still possibilities for extending these distance records even further. We just need the right conditions!

The time and effort in completing these record-setting QSOs on 78 GHz was significant. But, that's what amateur radio is all about. Reward for effort!

We are very happy with our achievements although it came at a personal cost when a wheel bearing on my 4X4 failed on the drive back from Halls Gap, 200 km from home. I had to leave the Toyota at a service station in Beaufort, Victoria. Local repairs were scheduled for a few days hence and then I had to get the missus to drive two and a half hours to pick me up. But - that is another story!

Thank you, Alan VK3XPD.

Photo 4: Set up on Mt William.

Please send any Weak Signal reports to David VK3HZ at *vk3hz@wia.org.au*

Digital DX Modes

Rex Moncur VK7MO

WSPR - Part 2: Critical requirements by Leigh Rainbird VK2KRR

Frequency stability and accuracy, followed by an accurate computer time clock are probably the biggest areas of concern for being successful with WSPR on bands above HF.

Most people are pretty disappointed to find out their brand new commercially purchased top of the line rig in many cases is not sufficiently stable or accurate enough to run successfully with WSPR on two metres and above. In most cases they are OK on 50 MHz, but at 144 MHz and over their frequency trace comes up with what we tend to refer to as a 'banana', as this is what the trace ends up looking like on the waterfall display rather than a dead straight line. The oscillator will usually drift as the radio heats up during the transmission and perhaps a cooling fan will then switch on midway through and begin to cool the radio which can make it drift back the opposite direction, which is what can cause the banana trace. Keep in mind the maximum drift the program can usually cope with is about four Hz over two minutes.

Some radios do have a high stability crystal option. In some cases this will work, and in others it won't be enough to keep the radio stable on transmit. You can only try it and see. I and a few others have found that the CR293 hi-stability crystal for the IC-910H does work but usually anything above about 10 watts TX power may still see it drift excessively.

If you find your rig is not stable enough for transmissions, in most cases it will be OK for reception reports. One option within WSPR is to set your station to receive only mode and you can upload any reports of signals that your station hears. This is also applicable to Foundation licence stations and SWL stations who are not licensed to transmit digital modes, but can provide reception reports. I will touch on this in a following issue.

While having a high stability crystal is good, what WSPR also needs is accuracy, to be within the 200 Hz bandwidth that WSPR searches for a signal. Now 200 Hz is not much of a block of frequencies to be within and many people find they will need to tune the rig away from the 144.489 dial frequency to get their rig within the 200 Hz. The best way to know if you're on the right frequency is to find a station whose rig is locked to a highly accurate reference signal, such as a GPS or rubidium 10 MHz reference.

If you can get hold of a GPS unit that will provide a 10 MHz reference signal output then all your worries of drifty signals are possibly over. Thanks to the Australian designed and produced XRef Precision Frequency Reference circuit boards. Developed jointly by Graham VK3XDK and David VK3HZ, the XRef series of boards take a 10 MHz reference signal from a GPS reference or other high accuracy source and generates a precision reference frequency. The XRef replaces the internal reference in a range of amateur radio transceivers. This eliminates the problem of your radio being off frequency and drifting as it warms up. You can

find out more info about the XRef here - *http://www.vk3hz.net/XRef/XRef_Home.html*

Installing the XRef in your radio will give you no frequency drift noticeable by the WSPR program, probably right up to the 10 GHz band, though I have never tested it that far up, yet. This will in turn make both TX and RX reports much easier at each end of the path. I find it can give a better signal to noise report and faster decode rates because the program does not have to think so long when compared with trying to cope with a drifting signal.

Aside from the stability the XRef can provide, the extreme accuracy is the other bonus. You will notice if you observe two or more stations on two metre WSPR who have GPS locked rigs, that the reported frequency of each decode never changes (unless there is a decoded aircraft Doppler shifted signal), where as with most standard rigs it will move around nearly each decode. GPS locked stations are always on the correct frequency.

If your rig is not GPS locked, there are two ways you can tune up your rig via an existing GPS locked station. The first is by using the GPS locked station's transmitted signal, once you know their actual selected transmit frequency within the program. For example, Andy VK5LA uses 144.490515 MHz. Using waterfall programs such as Spectrum Lab, you can get your rig spot on the correct WSPR dial frequency by tuning your VFO so that Andy's signal appears on Spectrum Lab on the 1515 Hz marker. Your rig will then be spot on and you should decode VK5LA at 144.490515.

The other slightly more difficult way is to send a WSPR transmission to VK5LA. The tricky part is, for this to work you need to get your rig within the 200 Hz WSPR bandwidth initially. If you're in there, you may find Andy is decoding you at 144.490460. If you have chosen to TX on that particular frequency, then you have no problems, but if you find the reported signal from Andy is slightly higher or lower then you can tune your VFO to correct this and you should find you will be pretty close.

More information about GPS locked stations on WSPR can be found on the VK Logger Forums.

As for getting your timing right, don't let your computer do it itself, it's never accurate enough. Remember that you really need timing accurate to within about two seconds of all other stations. Your best bet is to use a dedicated program that you can install on your computer, which will keep the timing in specification for you - assuming it's connected to the Internet. Probably the most widely used program is called Dimension 4. This is a free download, search for it on Google. Point it to sync with your closest local time server. You can also adjust how often the program re-syncs with the server. Mine is set to re-sync every 15 minutes. This appears sufficient to keep everything running smoothly.

If you can overcome the stability, accuracy and timing hurdles, thrown up by VHF and UHF, then you shouldn't have much else to worry about and it's time to start sending out some signals and uploading reception reports and watching the propagation unfold. Next month I'll outline a little more about using the WSPR software itself.

Please send any Digital DX Modes reports to Rex VK7MO at *rmoncur@bigpond.net.au*

Meteor Scatter

Dr Kevin Johnston VK4UH

May brought not one but two major astronomical events which produced significant enhancement to VK-ZL meteor scatter activity.

The first was the much anticipated Eta Aquarid Meteor Shower, which was predicted to peak around 5-6 May. This annual event occurs as the orbit of the earth around the Sun takes us through large tracts of debris left behind from the path of Halley's Comet. Although the comet itself has long passed the debris clouds persist in the solar system and we pass through them on the same dates every year. The gravitation field of the Earth, as it approaches these clouds, accelerates the dust particles into our own atmosphere. Reaching enormous velocities, the majority of these dust particles 'burn up' in the outer atmosphere at about 100 km above the earth, roughly the same altitude as the E layer. The ionised trails occurring as the comet debris is vaporised lead to the visual meteor trails, the shooting stars, and also the radio equivalent being the cause of the meteor reflections. Meteor showers are named after the star constellation where they 'appear' to originate in the sky although the true source is within our own orbit of the solar system. Eta is the principle star in the Constellation of Aquarius.

Unfortunately for me, for the third consecutive year, professional commitments took me away from home and I missed the peak of the event again. The Eta Aquarids shower however is known to be very wide and there was already enhancement of background random meteor activity apparent as early as 26th April. Recognising increased MS propagation on 144 MHz FSK441 on 2nd May a series of attempts were made between this QTH in QG62 and Arie VK3AMZ in QF22 on 70 cm FSK441. Although no contacts were completed we both received some partial decodes from a few hyper-short pings. Interestingly Peter VK5PJ (PF95) received a full decode from me even though he was off the side of my beam.

As I was away I took the liberty of asking some of the regular MS stations for their experiences and results during the 2014 Eta Aquarid shower:

Arie VK3AMZ reported: *With much expectation the Eta Aquarids*

(ETA) meteor shower returned again this year. It was predicted to peak on the 6th of May. The shower returned as expected but unfortunately the intensity of the shower was disappointing as compared to last year. Many operators took advantage of the meteor shower but while conditions could be described as above average they had fallen far short of the 2013 shower. I attempted to make contact with a couple of stations (VK4JMC and VK4CZ) on 432 MHz but this resulted in only very short pings detected at each end. I did decode an extremely strong but very short duration ping from VK4CZ on the 4th of May, but even after hours of scheduling no two-way contact eventuated. The highest reported ZHR (a figure of merit for the number of visual meteors) was 50 on the 6th of May; the same meteor shower last year recorded a ZHR of 135 on the same date, a considerable difference in shower activity. The next significant meteor shower due is the Southern Delta Aquarids (SDA) which is predicted to peak the 28th of July. This shower was very active last year, so hopefully it can make up for a disappointing ETA shower this year?

Adrian VK4OX reported: *I was only interested in making two way SSB QSO's on 144 MHz. I felt the Eta Aquarids was well below average this year. It seemed to peak on the mornings of the 6th May and 7th May, but they were working days for most operators so I made few two way QSO's. I do remember chatting to Arie and others on iChat and commenting that the shower was 'no better than random background' for most of the time. To sum up the 2014 Eta Aquarids MS shower in one word...'Disappointing.'*

John VK4JMC reported: *The Aquarids were quite active but I was unable to secure a ZL contact.*

Peter VK5PJ (PF95) sent log extracts and reported: *It's only my second year operating Meteor Scatter SSB for this shower and I had grand plans of camping in the shack for the entire week. I borrowed a friend's camp stretcher and had that ready to go. Stocked up the coffee and sugar supplied in readiness but I gave in to the comfort and warmth of my own bed.*

I had grand plans of a trip to VK8 to operate from the corner border with VK4/VK5/VK8 but after realising the cost to get my humble 4WD ready for such a trip, I put that one on hold. Plans have now changed to a trip to the VK5/VK8 border at some time to point south and east. Impressions of this year - not as exciting as last year and nowhere near the same number of operators on. As Adrian VK4OX said to me, it takes a special sort of operator to sit and wait for the right meteor to make a very rushed contact and then wait for it all over again. Stations do not need great power levels or antenna gains. Last year I ran with a bog stock IC-275H (70 watts I would guess). This year a CH5A PA helped me achieve 350 watts out on SSB.

Peter successfully contacted Adrian VK4OX (QG63) and Mark VK2EMA (QF37) on 144 MHz on numerous occasions during that period.

Ross VK2DVZ (QF68) reported: *Nothing to report from my end. I was not operating during the Aquarids period. In fact I have only two on-air contacts logged for May, being the 9th and 16th - both were FSK441 contacts with Bob ZL3TY. My operating opportunities have been very poor of late with only seven contacts made during the past seven weeks. I did work Arie VK3AMZ on 29/3, 5/4 and 26/4 all on FSK.*

Gavin VK3HY (QF22) forwarded an extract from his log and reported: *My log for the period records the following Eta Aquarids shower 144MHz meteor scatter contacts: 2 May VK4KSY (FSK441), 3 May VK4JMC, VK2AMS, VK2XN (FSK441), 4 May VK2XN (FSK441) VK4OX (SSB), 5 May VK4JMC (FSK441) VK4OX (SSB).*

Conditions were certainly down on last year but I am sure that many more contacts could have been made had there been more stations involved. It's interesting to contrast the relative ease of making M/S contacts now compared to my first Eta Aquarids contact with Adrian (then VK2FZ/4) back in 1997. It was hard work then and involved calling and listening during alternate five second periods for hours until a contact was completed. These days WSJT modes, liaison via the VK Logger, and reliable beacons make things so much easier. It would be nice to have more M/S activity. 50 to 100 watts, a small Yagi and a little bit of planning is all that's required to make FSK contacts at any time and SSB contacts are a cinch when there is meteor shower activity such as Eta Aquarids.

Mark VK2AMS reported: *During the Aquarid shower there was overall improvement in the speed on completions using FSK441 with Peter VK5PJ and Arie VK3AMZ particularly on the 4th May. As usual Arie VK3AMZ has a very good signal to me with most frames showing a decode and similar with Peter. Gavin VK3HY is also well represented. It was pleasing to work Kevin VK4UH and Ian VK3AXH on 13 April for a new grid. Managed to work Bob ZL3TY on 11 May although due to my geographical position I have a large hill in the way when beaming toward ZL so it can take an hour to complete. I find the digital modes a most enjoyable facet of AR.*

So the overall consensus appears to be that the 2014 Eta Aquarid shower was disappointing compared to previous years.

The second astronomical event was a significant Meteor shower associated with the passage of Comet 209 Linear which peaked around 23 May. This comet was only discovered in 2004. It passed around eight million km from Earth at its closest point and is thought to be two km in diameter. It has passed through our solar system twice since 2004. The

comet produced spectacular meteor showers in the northern Hemisphere even being reported in the popular media. Peter VK5PJ alerted the VK-ZL community to the possibility of significant MS enhancement over the weekend of 16-17 May in a posting on the VK Logger.

The bright red spot in the 11 o'clock position in Figure 1 on this radar plot from CMOR (Canadian Meteor radar) indicates the intensity of meteor activity from the Linear p209 shower on 24 May 2014. The remnant of the Eta Aquarid shower (ETA) can be seen in the centre of the plot for comparison. During this period FSK441 and or JTMS meteor scatter contacts on 144 MHz were completed from here with VK3AMZ, VK1WJ, VK3HY, VK5PJ, VK1KW and VK3KH - some on multiple occasions.

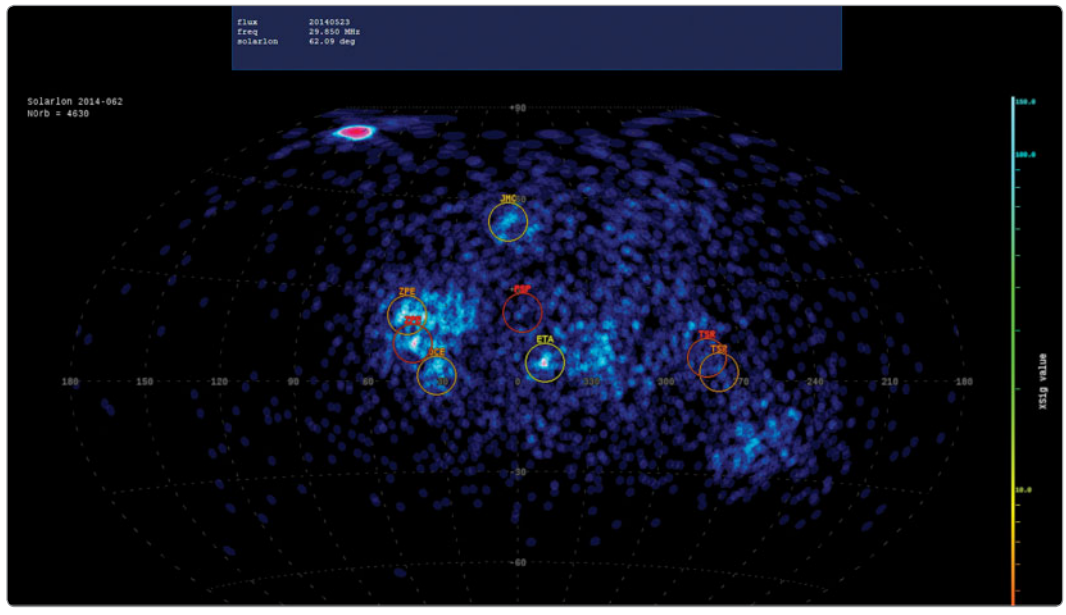


Figure 1: Canadian meteor radar plot.

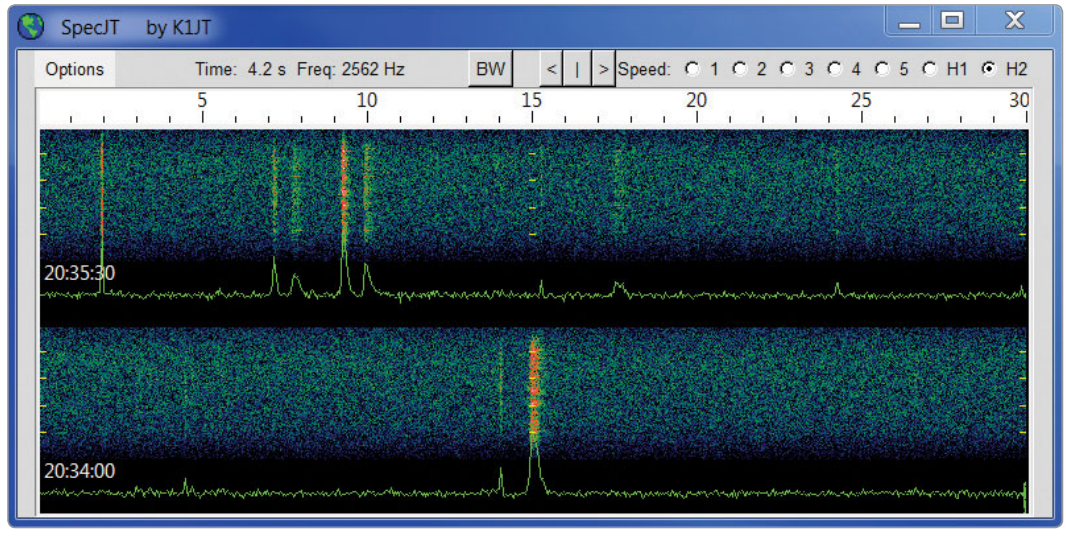


Figure 2: WSJT SpecJT window.

Frequently eight or more pings were visible in each thirty second sweep period in FSK441 as in Figure 2, captured on 24 May. The upper trace shows 10 separate pings, with the eye of faith, with clear decodes of four different stations, in the same sweep.

Next month I intend to include information regarding a number of on-line aids and applications for iphones and portable devices which may be useful for predicting and observing meteor shower activity.

Please send any reports, questions or enquiries about Meteor Scatter in general or the digital modes used to Kevin VK4UH at *vk4uh@wia.org.au*

Plan Ahead

ALARA Contest | 30 - 31 August

ALARA

Margaret Blight VK3FMAB – Publicity Officer

The ALARA AGM was held on 5th May, 2014. There was a good attendance of members with both radio and EchoLink being used in combination again. There were some noise problems on HF and it is hoped that reception will be better next year. But overall there is agreement that this combination works best to enable everyone to be heard and have their say on items. Those nominated for committee positions were elected unanimously and other vacant positions were nominated for and accepted on the night. The new ALARA committee is as follows:

President: Jean Fisher VK3VIP

Senior Vice President: Tina Clogg VK5TMC

Junior Vice President/Sponsorship Secretary: Shirley Tregellas VK5YL

Treasurer/Membership/Souvenir Custodian: Donna Ireland VK3FRET

Secretary/Minute Secretary/Public Officer: Jean Kopp VK5TSX

Publicity Officer: Margaret Blight VK3FMAB

Contest Manager: Lesley Smit VK5LOL

Awards Custodian: Marilyn Syme VK5DMS

Webmaster/Historian/Librarian: Jenny Wardrop VK3WQ/VK5AMW

ALARA Newsletter Editor: Bambi Page VK4AYL

News from VK4

Lyn VK4SWE is an enthusiastic and regular operator up north. She is still looking for newcomers to the proposed foodie chat net which was mentioned in last months' edition. We hope the news is spreading and will successfully recruit YL operators.

'The new hex beam is up and running and OMG it is amazing! Looking forward to lots of YLs

Photo 1: Lyn VK4SWE preparing the new hex beam for installation on to the tower.

lining up to check into ANZA on a Thursday on 14.183. Or for ROTA afterwards! I am trying to figure what is the best day for everyone for a foodie chat, or if indeed any one day is the way to go - maybe we ought to all listen out every day at a certain time/frequency as we do for our Morse practice on 14.053 vaguely 'after ANZA' and every day there might be nobody or various people depending on who is available. Anyway - a photo is attached, and note no 80 metre wire on the new beam, not that it would do me much good from up here, Hi Hi!'

News from VK3

There was a good ALARA presence at the Moorabbin Hamfest at which President Jean VK3VIP manned the ALARA table.

ALARA lunch

On Saturday 24 May the VK3 ALARA lunch was held at the North Point Caf`e which is situated close to the sea with a panoramic view back towards Melbourne. Despite it being well into autumn the weather was fine and sunny. A most enjoyable day was had with eight ALARA members and five OMs attending. These lunches offer the opportunity for members living in various areas in Victoria to come together and share experiences and offer

Photo 2: Sarah VK3SD, Diane VK3FDMP, Elly VK3FLEW, Amanda VK3FQSO, Kaye, Dianne VK3FDIZ, Julie VK3FOWL, Amanda's three children, Donna VK3FRET and Jean VK3VIP.

encouragement to newcomers. It was good to meet up with Kaye, who has signed up for the next YL Foundation course. We look forward to hearing her on the air shortly.

Julie VK3FOWL, who was present at the lunch, informed us that she took part in the John Moyle Field Day and actually came 6th in the contest with 68 points. She used a portable KX3 craft radio which goes by the name of ELLIE. Locating at Mt. Donna Buang, Julie's OM Joe VK3YSP undertook the first stint and completed six hours on air then Julie took over but only managed three hours before being interrupted by a storm, complete with thunder and lightning. This led to a hasty retreat by car which was somewhat hampered by the attached awning not being completely removed owing to the sudden severity of the weather. What adventures amateur operators can experience!

Julie, who works as a library technician in primary schools, took a Morse key to school one day to see if the children might show an interest. They were quite fascinated with this piece of equipment and happy to learn how to tap out their own name. What an opportunity to cover the history of early communication in Australia and the background of Morse and how it was used in a variety of ways in Australia. We can all be mindful of ways to engage with people and speak to them of our hobby which so many of them know little or nothing about. Well done Julie, keep up the good work.

Amanda VK3FQSO is a relative newcomer to the hobby having obtained her licence in October 2013 when she attended the YL Foundation Course. However Amanda soon developed an enthusiasm for contests and entered her first one a mere two weeks after obtaining her licence. She is keen to encourage other amateurs to participate in this aspect of radio and hopes that by describing her own experiences others may also decide to 'give it a go'. Thanks for the input Amanda, we hope the news about the pleasures to be gained through contests does reach other female operators with positive results.

'I thought I would let you know that lately I have been gaining some certificates for various radio contests and programs and wondered if you wanted to make mention of them in the hopes that other ALARA ladies might want to participate in the programs as well.

I will just list what I have done:

May 2014: Received results from last year's (2013) CQ WW DX SSB contest - I was entered in the Single-Operator, Low-Power, 15 metre section and was #1 in Australia and #5 in Oceania overall. I had only received my license two weeks before entering the contest.

April, 2014: World Wide Flora and Fauna (WWFF) program: Gained WWFF Hunter Certificate for contacting Activators in 10 different national parks.

April 26th, 2014: Each country also has their own award program for WWFF which has slightly different rules. I was the first operator in VK to receive the 'Diamond' level as a Chaser for the VKFF program. Diamond level is gained by making contact with Activators in 50 different national parks around Australia.

April 7th, 2014: For the South Australia National Parks and Conservation Parks program I gained the 'Platinum' level as Chaser by making contact with Activators in 50 different parks in South Australia.

March 29, 2014: Became first YL in VK to gain 'Shack Sloth' status in the Summits On The Air (SOTA) program, which is 1000 points as a Chaser.

With regards to the Keith Roget Memorial National Park award program, I currently have 35 out of the 45 Victorian national parks needed. The basic certificate is to have 15 national parks but I hope to get all 45.

There are many Yahoo groups that are available to join for each of these award programs and to keep up with who will be activating and on what dates and frequencies they will be likely to appear. It would nice to hear more females joining in. I hope to have a go at activating very soon for some of these programs but at the moment being a Chaser is very enjoyable.' Amanda.

Photo 3: Julie VK3FOWL, Kaye YL, Pat VK3OZ, Robyn VK3WX, Jean VK3VIP, Naree YL and Margaret VK3FMAB. Susan VK3UMM was nowhere to be found at the time, she was later discovered counting her money in the cafe, too late to be included.

VK3 news Amateur Radio Victoria

Jim Linton VK3PC
e *arv@amateurradio.com.au*
w *www.amateurradio.com.au*

Plenty of VK3 National Parks event interest

There are signs already that this year's Keith Roget Memorial National Park activation period in November may be headed for a record with early entrants staking out locations to activate and be hunted.

The activation period will be from Friday 14 November until Sunday 16 November inclusive. Currently five National Parks are listed to be activated including several of the rarer and much chased ones in East Gippsland - Lind, Alfred, Coopracambra and Errinundra.

Husband and wife Joe VK3YSP and Julie VK3FOWL will be at Wilsons Promontory National Park, which is also much sought after, across the weekend. Hunters will have no excuse to miss that one. The husband and wife duo is also heading towards qualifying for a recently introduced KRMNPA Plaque.

To register your interest in activating a National Park or for more information about the weekend or award, please contact Tony Hambling *vk3vth@amateurradio.com.au*

He is among a team of presenters this month running this month's 'Master Class - Portable'. The free but limited by RSVP invitation session looked like it might be filled soon by Foundation licence holders and others genuinely wanting to operate portable.

Making being a radio amateur more attractive

The Foundation licence, introduced in 2005, has been a welcome stepping-stone into the hobby with a healthy upgrading to a higher licence, and for some it must be said, having had a taste of the hobby deciding it is not for them.

The WIA has found that those aged 10 to 29 represent three per cent of all of its members. This seems to indicate that amateur radio is not overly attractive to young people. To address this situation and bring what is an old analogue view of amateur radio to the modern digital age, changes are being considered as we head toward celebrating the first 10 years of the Foundation licence. Some changes have occurred already to the syllabus with new questions better reflecting our responsibilities and knowledge of the electromagnetic radiation (EMR) licence requirements.

The Foundation licence is popular with 2,300 on issue or slightly more than the Standard or middle-level licence, with nearly 10,000 Advanced licences the significant majority.

Without that necessary entry level our overall numbers could be much smaller. That makes it very important that we continue to publicise what modern amateur radio has to offer and how easy it is to join.

The next Foundation licence class by Amateur Radio Victoria is on 23/24 August. To enrol or for more information contact Barry Robinson VK3PV by email to *foundation@amateurradio.com.au* or mobile 0428 516 001.

Cross-country skiers on our roof top

We hope heavy snow has fallen as the annual Bogong High Plains winter mini-expedition in north-east Victoria is held by cross-country skiing radio amateurs from 31 July to 4 August. Using solar powered 160 m to 70 cm gear at 1700 metres above sea level at night-time will be Gerard Warrillow VK3GT, Michael Warrillow VK3FMAW and Stephen Warrillow VK3SN.

Listen for them on 40 metres in the late afternoon and 80 metres each evening as they take shelter from the elements. Local VHF and UHF repeaters may be used while skiing between camps.

Attend

Waverley ARS Auction	5 July
Gippsland Gate REC Hamfest	19 July
Northern Corridor RG Hamfest	3 August

VK2 news

Tim Mills VK2ZTM
e *vk2ztm@wia.org.au*

At the end of June ARNSW has a balun day. There will be lectures followed by the practical construction of a 1:1 or 1:4 balun from a kit. Wire will be available for the antenna. The day is Sunday 29 June at the VK2WI site with a mid-morning start. Bookings are required: *balun@arnsw.org.au* More details have been provided in the VK2WI broadcasts.

The next ARNSW Foundation course is this month, over the weekend of Saturday 19th and Sunday 20th July at the VK2WI site. On the Sunday all grade license assessments are available. Bookings are required for all activities: *education@arnsw.org.au* The next Trash and Treasure at the VK2WI site will be on Sunday 27th July from 0930 hours followed at 1200 by the Radio Homebrew and Experimenters Group gathering.

Julian VK2YJS/AG6LE can assist with examinations for an American license. He can be contacted via *vk2yjs@gmail.com*

During the Monday evening upgrade course conducted at the VK2WI site, there is work being carried out in the rearrangement of the library facilities. Anyone who would like to help is most welcome between about 1700 to 2100 hours.

On Saturday 5th July 2014 the Waverley ARS will be holding their annual Radio and Electronics Auction at their Rose Bay club rooms. Book in from 0830 hours. Their next Foundation weekend is the 13th and 14th September 2014. They also recently held their AGM.

The original VK2WI building was constructed mainly with volunteers in the mid 1950s. During May and into June RF operations ceased while major renovations were carried out. This involved removing fibro sheeting from ceilings and eaves, bricking up the end wall in place of the temporary fibro and reroofing in Colorbond and fire blanket lining. During the renovations all RF services were suspended. By now most services should have been restored. The project concluded with the replacement of the fibro site toilet with a brick building.

During the renovations of the VK2WI building it was discovered that the original volunteer workers left their mark with their callsigns within the roof space by painting them on a major beam. Those listed were YC – J B Corbin; CB – G A Rutter; AET – A Havyatt; GE – M G Datson; CF – J D Clark; ABU – A M Dan; EN – E C Hulme; AHP – H J B Pickett; EO – D H B Duff and VC – W B V Cahill.

The Hornsby and District ARC held their AGM in late May. Little change in the management committee, with the principal office bearers as previous. John VK2ZOI agreed to another year as President with perhaps retirement at the next AGM? The Vice President is Rod VK2DAY, Secretary Bob VK2ZRM and Treasurer Andy VK2TAN, with Colin VK2JCC the lone committee member.

The Hunter Radio Group has a ladies lunch scheduled for this month, most likely Thursday 3rd. Details on their Monday night news net.

Manly Warringah RS have a lecture on July 16th by Ben VK2BEN on 'How to build a HF APRS tracker' and on the 30th they have the 'Tele-Fun' vintage telephone night.

Summerland ARC has recently advised that the club email address is out indefinitely with the service under review and with a possible change of ownership of their domain. They have also advised that there will be no further SARCFEST events. It has been suggested that they may be able to join with other regional events to create a larger function.

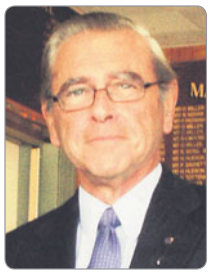
WICEN NSW has their annual involvement in Nav Shield over the weekend of the 5th and 6th July. They held their AGM in mid-June. The Trek for Timor has been confirmed for the 20th September in the Blue Mountains. During August, September and October there are Alzheimer's Australia Memory Walk and Jog events in Port Macquarie, the Hunter, Inner Western Sydney and North Wollongong. These are fairly short events. Details for all events can be found at *www.nsw.wicen.org.au*

The reformed Armidale ARC has continued to be very active. They recently had an AGM. Many working bees have the club rooms up and running.

Rotarians had one of their international conferences in Sydney late May and early June. Part of their activities included amateur radio where they had been allocated a special event callsign – VI2R. Although the special call was available for general use outside conference times, there was apparently little interest in taking a shift with it.

The 39th annual Oxley Region ARC two day field day at Port Macquarie is over for another year. Next month on Saturday 2nd August will be their AGM.

73 – Tim VK2ZTM.



VK3news Geelong Amateur Radio Club

Tony Collis VK3JGC

New 24 GHz world record

A new 24 GHz EME world record was established by Charlie VK3NX when he contacted Willi LX1DB in Sandweiler, Luxembourg, by CW, on 27 April 2014. The terrestrial distance recorded was 16,468 km; but with the average distance from the Earth to the Moon being 384,403 km, this would make the actual path significantly greater. Full lists of all present and past UHF records may be found on the WIA web site at *http://www.wia.org.au/members/records/data*

The GARC syllabus activities

Aside from the role of treasurer and webpage administrator Lou VK3ALB also arranges topics for the club Friday evening meetings. The day following ANZAC day the topic was 'It Came from the Junk Box.'
In addition to the two shown above there was also another input from Calvin VK3ZPK of a valve LF/MF receiver constructed some 14 years ago from 'junk box' items. Amongst several other exhibits was one from Peter VK3ZAV of an HF RF bridge which featured both high sensitivity and low level detector linearity, which he uses for his antenna experimentation. Bert VK3TU produced two items, one a 10 MHz frequency source and the other an antenna tuner for use with Yaesu transceivers. Lou VK3ALB produced a high stability local oscillator for use with his microwave activities.

The follow up to this very successful home brew session will be for members who have bought things at auctions, or hamfests, to bring them in and show how they have used /adapted those items and to give others ideas on how to recognise the potential of what could be done with similar 'valuable stuff" that we take home.

Photo 1: A DSB transmitter by Calvin VK3ZPK.

GARC's answer to 'The Block'

The clubs' Wednesday group has undertaken the refurbishment of the workshop, which involves re-plastering and painting all four walls and ceiling as well as improving the lighting system, whilst not disturbing the resident IRLP node. This also involved tidying up and re-routing of numerous cables coupling the antennas and rotators on the east and west towers to the radio equipment in the adjacent shack. In addition we can now selectively dispose of historical artefacts that had been resident there, going back decades.

The GARC two metre beacons and repeaters

The GARC has three repeaters operational on two metres and two on 70 cm, as listed below:
Repeater VK3RGL on 147.000 MHz with 91.5Hz CTCSS.
Repeater VK3RGC on 147.125 MHz with 91.5Hz CTCSS and IRLP node 6572.
Repeater VK3ROW on 147.275 MHz with 91.5Hz CTCSS.
Repeater VK3RGL on 439.500 MHz with 91.5Hz CTCSS.
Repeater VK3RGC on 439.575 MHz with 91.5Hz CTCSS and APCO P25.

The GARC also supports two beacons, for two metres and 70 cm, as listed below:
Beacon VK3RGL on 144.530 MHz in QF22DC beaming W and NE.
Beacon VK3RGL on 432.530 MHz in QF22DC beaming alternately W and NE.

Photo 2: A 5.7 GHz transverter by Chas VK3PY.

The following relates to work carried out in late January 2014 by David VK3QM and Chas VK3PY on the two metre beacon, in the replacement of the NE two metre Yagi antenna at Mt. Anakie. Both Yagis were some 10 years old.

Upon inspection, the two metre north-east facing antenna, as well as its obvious general physical deterioration was found to have the connection between the gamma capacitor and socket completely corroded through, to the point where it was probably not making a good electrical contact. The 'west' antenna was fine, if a little shabby looking.

The two metre beacon transmitter now delivers 18 watts into the feed line, which after a small amount of line attenuation and two-way power division leaves 7.5 watts into each of two Yagi's. One Yagi ('west') is aimed at 293 degrees. The other Yagi ('north-east') points at 32 degrees. Each Yagi has 8 dBd gain (according to Yagi Analyser, on which the design was produced) and a -3 dB beam width of 50 degrees. Their -8 dB beam width is 84 degrees. Even at the latter beam width, the beacon's ERP equals what it would be with a simple omni directional antenna such as a halo or crossed dipoles (in the latter case, it would be running twice the power into a -3 dBd antenna).

The 70 cm beacon has its two Yagis similarly oriented, these being five element designs of about 8.5 dBd gain and therefore slightly narrower beam width. A significant difference with the 70 cm beacon is that unlike the two metre beacon, which transmits simultaneously in both directions, it switches directions at approximately 15 second intervals, announcing the direction with either 'W' or 'NE' at the end of its callsign, as appropriate. Its output power is also significantly higher at 15 watts into each Yagi.

It is unlikely that anyone will notice any difference in the 70 cm beacon's signal since its old antennas were still quite functional. However, reception reports are always welcome.

Photo 3: The two metre and 70 cm beacon antennas at Mt Anakie.

Chas VK3PY has already received a reception report from Leigh VK2KRR on the two metre beacon which was now registering 59+10 at his QTH near Wagga Wagga. Leigh mentioned that he felt the beacon had deteriorated over the past couple of years, to the point where he stopped looking for it. Apparently a couple of VK1's and VK2's thought so too.

Adapted from information provided by Chas VK3PY and David VK3QM.

GippsTech 2014

Make more use of that multi-mode, multiband transceiver that includes 6 m, 2 m and 70 cm! Learn more about what can be worked on VHF, UHF and microwaves through a two-day immersion experience by attending the annual GippsTech conference.

GippsTech has a reputation as a premier amateur radio technical conference. It focusses primarily on techniques applicable in the VHF, UHF and microwave bands, especially for weak-signal contacts.

It is almost that time again: GippsTech 2014 will be happening on the weekend of the 12th and 13th of July, at Federation University Australia Gippsland Campus in Churchill, Victoria, about 170 km east of Melbourne.

A Partner's Tour will be conducted, together with an informal social gathering for dinner on Friday and a Conference Dinner on Saturday.

Those of you who have more experience and have information to share with others are invited to submit titles of presentations to the Conference Chair Peter VK3PF as soon as possible.

We look forward to seeing you at GippsTech in early July.

Further details are available from the Eastern Zone Amateur Radio Club website: ***http://www.vk3bez.org/***

VK4news QTC

Mike Charteris VK4QS
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Greetings fellow Queenslanders, and welcome to the July edition of VK4news – QTC. Over the past few months I have endeavoured to offer some inspiration and insight into how you and your club and the WIA can operate as a homogenous group in harmony and advancement. Like any organization that is involved with large groups of people, there are bound to be issues that annoy us, and sometimes fester into discontent. This can, and often does lead to emails to the head of the organization to vent the spleen, demanding all sorts of retribution and revenge for apparently bad or ineffectual processes within the organization. Once all your grievances are laid bare at the feet to the Head Honcho, alas there is but silence, and more silence, while you are left with time to reconsider your approach to the situation. The question is, can one man make a difference, can one man do everything for everyone so that we might judge his ability as perfect. Well it's at about this time that you wake up from the dream, and realize that the answer is a blindingly obvious no. He can lead, he can inspire and he can infuse the body with enthusiasm, but he needs all the help he can get to make this animal function day in and day out for you.

The WIA is primarily operational by way of the good will of those who, apart from enjoying their hobby as much as you do, have decided to do their best to make it a little better by volunteering their own time. Now this can be at the WIA head office and it can also be at and in every amateur radio club in Australia. All these people are volunteers, non-paid amateurs who believe that the best way to get a good result is to stick together and support the national body the WIA. They pay their $2.00 a week in to the jam tin and stand to be counted, especially by the *non-members* who lurk in the shadows.

This precious time that they humbly donate for you could surely be spent with their own wife, husband, and children creating memories a family can cherish forever. But ever thus, they continue to give freely, for you, the WIA member, and even more so for the other you, the 'you' who is not a member of the WIA, and can't be bothered joining a club. Though you, the non-member benefit perhaps even more, as you get it all for free, a free ride on the backs of your mates. These, your fellow radio amateurs, who carry 2/3rds of the non-WIA amateurs in this great country of ours like mill stones round their necks.

It fascinates me no end that the non-WIA members can in all good conscience switch on their radios and idly wile away the day enjoying the hobby ad nauseam, while WIA volunteers give up time with their own flesh and blood to make it so. Might well I have predicted peril and dark clouds on the horizon for the WIA, and fear not the day draws ever near my friends when age multiplied by numbers will herald its demise in Australia. Now is the time, now for the sake of just $2.00 a week it is time for every non-member amateur to enlist into the world's oldest national amateur radio body, the WIA. Reach down, make sure you have a set and join today, email the President, let him know you have joined for the first time since becoming an amateur, be it five minutes ago or 25 years ago when you had that blue with some clown at a hamfest. Become part of the voice that screams from the rooftops for a 'fair go' to the ACMA when it comes to the commercials eyeing off our frequency allocations as cash cows for their businesses. And I hear you scoff, how seriously does the ACMA take the tiny voice of the WIA who are but a third in number of their total by way of membership. And you're bloody well right, lip service is about as good as it gets for we are but 4,000 plus give or take the ever growing number of SKs each and every day. We are the tiny stinging thorn in the side of the ACMA, who would gladly be rid of us if given the chance. In any battle it is numbers and strategy that wins the day, and win it we must, by encouraging every non WIA member to join our ranks and strengthen our battlements with their membership. And if you don't agree email me, but I bet that will be far easier than embracing the truth.

News from Caboolture Amateur Radio Club

Peter Hewitson VK4QC tells us, Ham Fest - did you say Ham Fest? I sure did, and you can be part of it at the annual Caboolture Ham Fest on Saturday 19 July 2014 from 9.00 am. There is bound to be something for everybody, be it brand new or second-hand. For those feeling a bit peckish there will be a BBQ breakfast, just the thing after the early rise and drive out to sunny Caboolture. Not to mention the buy swap sell stalls and the lucky door prizes and much more to keep you busy for the day. So come out to the Caboolture Ham Fest at their clubhouse to pick up a bargain and catch up with your mates. You never know, you might just make some new friends while you're there.

The 630 m Band

Peter also has a good message for us regarding the 630 metre band, so take it away Pete.

So, you've done everything else in amateur radio, so what's new. Well the 630 metre MF band, 472 kHz to 479 kHz is alive with signals every night. There are 15 to 20 active hams who are regularly experimenting with different modes, antennas and equipment continually breaking records. At the time of writing the record stands at a distance of 5,047 kilometres, being a contact between Murray ZL1EE in New Zealand, and Derek VK6DZ in Elleker, West Australia using WSPR. Recently Nick VK2DX achieved a full house with contacts from VK1 to VK8 and ZL. I myself have achieved a two way Morse contact on this band with ZL1ZLD back in September 2013 for a distance of 2,340 kilometres. You might like to look for Noel's VK3FI CW beacon on 473 kHz every evening, which has been heard far and wide. And if you really want to know more, then consider joining the Yahoo 630 metre band group, and you will be off to a great start. Best 73 for now from Peter VK4QC.

News from the RADAR Club of Rockhampton

This month we hear from Clive Sait from Rocky regarding the annual Clairview gathering by club members.

Clive tells us that the weekend beginning 3 May saw one of the biggest gatherings of amateurs in VK at Clairview, a beautiful spot on the beach between Rockhampton and Mackay. About 120 rolled up and had a ball. This needed two sittings of dinner. Next year a roast spit or a large BBQ is planned. The Clairview weekend started many years ago to allow Rockhampton Amateur Radio Club and the Mackay Amateur Radio Club to meet and have a weekend together. Clairview was always held on the old May Day long weekend as it gave people that extra day to enjoy each other's company, along with the perfect weather for that time of the year. Many visitors arrive early and after falling in love with the place, actually stay longer.

It didn't take long for the word to get around about how good the Clairview weekend was, and this year saw 18 of Noel's Nutty Campers take the plunge and book into the Barra-Crab Resort at Clairview. Being a once a year event, the Clairview gathering is a time to discuss all things radio, and to re-establish acquaintances. Friday evening through to Sunday morning sees all the campers relax and enjoy the wonderful surroundings on offer at this most beautiful spot on the Queensland coast. One of the main highlights is the world renowned Saturday Night Mega Auction that sees everyone bidding to eventually end up with something they spotted as a bargain.

The Clairview event has proved so popular over the years that the onsite accommodation was booked out. A total of 50 sites had been booked by radio amateurs, which show how popular it really is. Clairview also offers camp, caravan and motor-home sites for the more adventurous. I would like to thank all those who attended and participated, especially those who brought along goodies for the auction. And let's not forget to give a big thank you also to the ladies and gents who helped run the events. Best 73 and regards, Clive VK4ACC, RADAR Club Secretary and Event Organizer.

Silent Key — Edmund (Ted) Powell VK2AU

It is with great sadness that the Fisher's Ghost Amateur Radio Club reports Edmund (Ted) Powell VK2AU passed away suddenly at home on the morning of 16 March, 2014 aged 71 years.

Ted was born in England in 1942 and migrated to Australia in 1949 with his family. He left school at the age of 13 to work on cattle stations in western Queensland, and as a boiler maker repairing mining machines, before retiring at the age of 47, although he continued to work on the goldfields in the Sofala/Hillend district, operating a sub-surface dredge underwater, using hooking gear.

Ted was highly respected within the local CB community in the Campbelltown area during the late 80s and early 90s where he earned himself the nickname 'Santa Claus', before he became a amateur in 1993 with the callsign VK2JAU, which he later changed to VK2AU when it became available (AU being the symbol for gold).

Ted was very much involved in the Fisher's Ghost Amateur Radio Club, which he joined in 1994. He had limited physical ability due to a serious motor vehicle accident, but he was always willing to lend a hand at club working bees at the amateur radio site at Cataract Scout Park, and wouldn't hesitate to volunteer to go up in the cherry-picker to work on antennas. Ted was an avid DXer and had worked around 300 countries. Although he wasn't into contesting, he would always be the first to arrive at the Scout Park during contests to chat with, and cook BBQs for, the contest crew. Ted was appointed Public Officer and QSL Manager for the Club in 2001, a role he continued in until his passing. He was made a life member of the club in 2013. He will be sorely missed by his family, all his friends in the Club, and his friends worldwide.

Ted is survived by his son Jon and grandchildren Jess and Dylan. Valé Edmund (Ted) Powell VK2AU.

Advised by Peter Richardson VK2PR on behalf of the Fisher's Ghost Amateur Radio Club.

VK2news Orana Region Amateur Radio Club

Ross Fraser VK2WN

PR4 Amateur Radio Day report

This is a report on the amateur radio day held on Saturday 12 April, 2014 at the park near the Dubbo Visitor Information Centre site. This was PR4 Amateur Radio Day which is part of a week-end organised by the WIA to promote amateur radio. This year it was on Friday 11 April, 2014 to Sunday 13, April 2014 and the WIA asked that each club operate on one of the three days. The ORARC chose to operate on the Saturday. The day started at around 10 am and finished at around 4 pm.

Amateurs and other people who attended on the day included:
Craig VK2FBNG – The main organiser of the event.
Ross VK2WN – Assisted and had a chat with nearly everyone.
Lez VK2LEZ – President of Central West AR group, Orange.
John VK2EJM – Secretary of Central West AR group, Orange.
Jeremy – a member of Central West AR group.
Chris Ryan – after going to garage sales!
Reg VK2TRH – with folder and notes on his MST400 40 metre QRP transceiver.
Jeff VK2FJEF – as he was on the day, but is now VK2JEF.
John VK2HA.
Ludwig - the brother of John VK2HA.
James VK2LQZ.
Des VK2III.
Scott VK2UBQ.
Rob Procter – from Narromine, and who is interested in amateur radio.
Reg VK2TRH.
Craig VK2FBNG.

Reg VK2TRH and Craig VK2FBNG having a chat at the ORARC PR4 event.

The main organiser for the event and for the day was a new and enthusiastic member to ORARC Craig Lesueur VK2FBNG. Luckily our club has a fitted-out trailer, including signs and other gear, which is ham-radio ready and this trailer has many, if not all, things ready to operate amateur radio portable.

Craig had brought the trailer and had set up a marquee and tables and chairs. He had also set up a HF radio and a 40 metre vertical. He also had a two metre rig and antenna for local club-based contacts around Dubbo.

Luckily the weather was mainly sunny with almost no wind, a perfect day to operate portable. Craig had also set up the club banner facing a main road to attract the attention of passing motorists.

Our main purpose for setting up the station on PR4 Amateur Radio Day was because our club had invited members of another central west amateur radio club - the Central West Amateur Radio Group from Orange, to attend. We were lucky to have their President Lez VK2SON, Secretary John VK2EJM and another member Jeremy VK2FLE. All are radio enthusiasts and we all enjoyed the meeting of the two clubs.

It was also agreed that we would continue an on-going friendship and co-operation between the two clubs. As part of this friendship I agreed to operate on their next HF net, on 3.653 MHz on the following Wednesday at 8 pm, which I did.

It was an enjoyable day set up in a prominent public position in the park next to the Dubbo Visitor Information Centre. Thanks again to Craig VK2FBNG for organising everything. 73.

Plan Ahead

Remembrance Day Contest	16 - 17 August
International Lighthouse Lightship Weekend	16 - 17 August

Murray Quad May 2014

Bruce Glasson VK3FBNG

The Shepparton and District Amateur Radio Club assisted with the running of the Murray Quad which was run on Saturday 10 May this year. Nine amateur radio operators took part in this event, including two who are not members of the SADARC club. Thanks to these who helped make up the required numbers. The amateurs taking part were Darren VK3HEN, Pat VK3OV, Greg VK3POP, John VK3PXJ, Alan VK3FLAN, Bruce VK3FBNG, Mike VK3FMAA, Ron VK3COP, Dave VK3DMX and Steve VK3DP. Bruce's and Mike's partners also helped: XYL Myrtle assisting Bruce and XYL Mia assisting Mike.

Many of the radio club members arrived at the yacht club on the Friday before the event. The yacht club premises were used as the base for the whole event, including the communications. After arriving, Darren VK3HEN borrowed a ladder and climbed onto the roof where he attached the antennas. This was a job on its own as four frequencies VHF marine, UHF CB, 70 cm. and two metres FM were to be used during the event. Luckily Darren had a spare marine VHF antenna which we could utilize in place of the yacht club's damaged antenna. Although we had cables running everywhere, we soon had all the antennas and radios up and running. SWR was good on all bands. The yacht club members were to use the VHF marine, the amateur guys 70 cm and two metres along with UHF CB. Some of the other volunteers were to use UHF CB as well. Bruce VK3FBNG and Alan VK3FLAN were to man the main control.

Photo 1: Bruce VK3FBNG and Alan VK3FLAN.

As Friday progressed more of the amateur volunteers arrived to assist with setting up and testing of the radios. The yacht club premises were ideal and their members were most accommodating, inviting us to use their rooms, including their excellent cooking facilities, showers and all the rest. After all the radios were set up and tested some of us enjoyed a BBQ before travelling to the pre-event briefing at the Yarrawonga Mulwala Golf Club that evening.

Our Saturday morning started early (5.30 am) as the event was due to start at 7.15 am. Radio operators at the first four check points in the swim section were in position at 6.30 am and ready to go. The runners started after the swim section was completed. The first runners arrived at the Yacht Club finish line to be greeted by heavy rain just before the start of the bicycle section. After some advice from the police the organizers decided to cancel the bicycle section because of the higher risk of an accident due to the wet roads.

The last component involved paddling canoes from Cobram to five km upstream and back (twice). This was the revised course as the river was deemed to be too low from Cobram to Tocumwal. Steve VK3DP set up his comms near the finish line at Cobram and Darren VK3HEN, assisted by Alan VK3FLAN at the turn around point. These operators relayed information between the turn point and the finish line and on to the communications control centre at the Yarrawonga Yacht Club. Steve and Darren used both the two metre and 70 cm repeaters at their locations. The Yarrawonga 70 cm repeater seemed to be more effective as we had reception problems with the two metre Mt. Major repeater later in the day. Steve and Darren indicated that they will make some antenna improvements for next year's event and possibly use the 70 cm repeater more next time.

It was unfortunate the cycle section had to be cancelled as some of the volunteer radio operators travelled a long way only to find out their check point was not required. It was great to see some of these guys show up at the control point for a while. Given the trying weather conditions the organizers did a good job of running their first event of this type. They are planning to run it a month earlier next year in the hope of warmer water and higher river levels.

The radios worked well for our first go at this event and with a few changes we hope to improve the reception next time.

The event team were pleased with the overall result of this first event. The Quad was run to raise funds for Save the Children, and succeeding in raising $25,000 for this charity.

Much thanks to all who took part and to the many volunteers who gave up their time to make it all possible.

Photo 2: Some of the team of radio operators at the Murray Quad 2014 communications centre.

VK6news

Keith Bainbridge VK6RK
e *vk6rk@wia.org.au*

Another two months gone bye, the weather is starting to cool down and we are even getting some rain at last! Due to a systems issue last month, the June column was not published so this month we have a joint June/July edition.

So to start off with clubs this month we have an update from the deep-south.

Bunbury Radio Club

In our last newsletter I said the club's annual fee is $20. Since then the treasurer promptly pointed out that it is actually $25. My wounds are healing nicely. Also I referred to Fergie as VK6VB. One of our readers pointed out that this is incorrect as Fergie has let that licence lapse. Having pleaded guilty to both of these errors, let's now move on with the main story.

We have been experiencing some problems with our IRLP setup. This has since been fixed with a new power supply.

We now have two approved assessors in the south west area and plans are underway to upgrade several members of the club from Foundation to Standard licence with a planned assessment date set for 28 June 2014, in Bunbury. The Club will be running a revision weekend on 14 June 2014. We are working hard to provide support to those members wishing to upgrade. The next step will be to upgrade all members to the Advanced licence. Any non-club amateurs in the region who also wish to upgrade should contact Norm VK6GOM on 0438 878 582.

Some time ago, a club member, Barry VK6WF was instrumental in establishing the Kellerberrin UHF repeater VK6RKB, with some help from VK6SKY, VK6LV, VK6BQQ and VK6HRC. Despite the fact that the repeater was largely constructed using existing components, Barry used quite a bit of his own hard earned money to complete the work on VK6RKB (438.325 MHz). At a recent meeting the club agreed to reimburse Barry for most of these additional costs incurred in the construction of the repeater.

Club member Alek VK6APK runs a receiving station to monitor Automatic Information System (AIS) signals from ships in the region of the Port of Bunbury. These AIS signals are sent by ships on 162 MHz and Alek's station receives and decodes the signals. The data is forwarded to a number of internet sites around the world. Probably the most well-known and used of these sites is *www.marinetraffic.com* The data from Alek's station and that of a large number of similar stations around the world is collated and put on a Google Map to provide real-time cartographic ship-location.

Alek's station is very simple. It requires very little ongoing maintenance or attention. The heart of the station is a Comar AIS-2-USB AIS receiver. It has a port for the antenna and a port for connection to a computer via a USB cable. A dedicated laptop PC running 'AIS Dispatcher 1.0' software plus the internet connection complete the station. The antenna for reception of the 162 MHz AIS signals is a Andrews Communications 'X-510N-ACS 2 m/70 cm antenna.' Over the last couple of years, tests have been carried out with a large number of homebrew and commercial 162 MHz antennas and the Andrews 2 m/70 cm collinear antenna has beaten every single one of them by a substantial margin. The antenna at Alek's QTH is some 12 metres high and with a setback of just 300 metres from the Indian Ocean, it gets a great view of all shipping in the region.

The reason that the station was installed is to monitor and evaluate VHF propagation from the south west of WA. Quite often, the range on 162 MHz matches what is happening on 144 MHz so the AIS network is a valuable tool for local hams.

To see what is happening at any time go to *http://www.marinetraffic.com* and zoom in to the port of Bunbury, on the west coast of WA, about 150 km south of Perth. You will see a number of ships displayed on the map. Click on any of these and a pop up window will give details and pictures of the ship. By clicking on (AIS Source: 682 VK6APK) in that pop up window, a new page will open up and give current and historical data for Alek's station. *http://www.marinetraffic.com/en/ais/details/stations/682*

A highlight of interest in the Average and Maximum Distance graph is the fact that on 17 December 2013, a maximum reception distance of 1987.19 nautical miles (3680 km) was achieved. Other hams in WA and Australia run similar AIS receiving stations, for similar reasons. In WA, Steve VK6HV and Rick VK6XLR provide great coverage with their stations and both of those operators helped in establishing Alek's station.

Welcome to Allan Browne a graduate from the CB ranks who has joined the club and plans to sit for the Foundation licence in the near future, with a little help from his friends. Also Brian VK6HBS is back on the air again after a couple of club members pitched in to help him erect a new antenna.

Finally, any south west based amateur is more than welcome to join and participate in our activities. The annual fee is only $25.00. Hams wishing to join can contact the club via our secretary, Brian Andrews, on 0403 975 953 or *vk6brc@wia.org.au* Also if passing through put out a call on our repeaters 146.650 MHz or 438.650 MHz.

Thanks Norm, the news from down south is appreciated, and keeps those of us who travel down

there regularly in the know!

Next up today is the Hills group:

The Hills Amateur Radio Group (HARG)

Our latest technical talk on Saturday 26 April was on SSTV and was very ably delivered by Peter VK6QK. There was a great deal of interest and Peter was kept busy answering questions from club members. Thanks very much Peter for taking the time to educate us.

Our annual HARGfest white elephant sale was held on Saturday 10 May at the Club Rooms. All tables were booked at an early date and we were pleased to welcome fifteen different sellers and clubs - TET-Emtron, SpookTech, WARG, WA VHF Group, NCRG, Scout Radio, WIA, Ham College, HARG, Allan VK6AN, Richard VK6BMW and Fritz VK6UZ with two friends. Thanks for supporting HARGfest and bringing lots of interesting goodies.

Thanks to some very generous organisations we had nine prizes to be won in the raffle plus a door prize of a hand held frequency meter. Ian VK6LCT of Timberden Plant Hire and Heath VK6TWO of Spooktech.net jointly donated an X1M-PRO, a compact, multiband, multimode, HF QRP Transceiver valued at $500. Other prizes were a 900 to 1300 MHz SWR meter donated by Steve VK6ST, a True RMS AC/DC clamp meter and a Peak Component analyser both donated by Altronics and five balun and antenna kits donated by TET-Emtron. Please support all of these organizations who donate our raffle prizes each year and enable us to maximise the money we earn to support the club's activities.

The food stalls were very busy with our famous HARGburgers once again being very popular. Thanks to all the HARG members who set up the tables then manned the entry table and the food stalls.

HARG meetings are held twice a month at our club rooms near the corner of Brady and Sanderson Roads in Lesmurdie. Our Social

Peter VK6QK delivering his talk on everything SSTV.

and Practical meeting is held on the second Saturday of the month and our general meeting, often with a technical talk, on the last Saturday of the month. Doors open at 1.00 pm for a barbecue lunch and the meeting starts at 2.00 pm. More information at *www.harg.org.au*

Additional news from **HARG**:
As an addition to the HARG news I can now advise the winners of the HARGfest door prize and raffle. The door prize of the hand held frequency meter was won by Stuart VK6VSH, the X1M QRP HF radio was won by Harry VK6BB, the Altronics clamp meter went to Anthony VK6AXB, the Altronics component analyser was won by Phil VK6SO and the three TET-Emtron balun kits were won by Anthony VK6AXB, Steve VK6CS, and Gary VK6OD. Thanks to everyone who purchased raffle tickets and commiserations to those who didn't have the lucky numbers. Unfortunately I didn't keep a record of the winner of the 23 cm SWR meter. We are looking at some changes for next year including holding HARGfest in April instead of May and putting up a large marquee as a lunch venue with more tables and chairs. More news next month.

Cheers and 73 until next time from Bill VK6WJ, Publicity Officer for HARG.

Recently there has been a surge of interest in the 23 cm band so Rob VK6LD is promoting a 23 cm net on Thursday nights. The net starts on 1294.100 MHz, FM mode, vertical polarity. Later the net moves to USB for those with SSB equipment on 1296.150 MHz, vertical and horizontal polarity. An alternate/liaison frequency will be 146.575 MHz FM for those who are RX only or can't call back in.

The Net has been running for about one hour over the past weeks, so there are plenty of topics of interest and chat worth tuning in for. Alternative net control is provided by Andrew VK6IA when Rob isn't available. I've been joining in myself when possible and the list of check-ins is growing steadily. Why not join in if you are in the metro area and have the gear?

I've received a report somewhat indirectly about **WARG**'s activities of late. It was accompanied by pictures but unfortunately they were embedded in the text and could not be reproduced.

Hoddywell VK6RAV

The working bee on Saturday 5 April installed the final guy wire; that is all 36 guy wires have now been replaced with 18 of the original guy wires to be cut away at a future working bee. The decision to stop removing existing guy wires was made at the half way level to provide additional tower stability for the higher tower work as there is quite a bit of disturbing movement and twisting in the tower's upper levels.

The final six guy wires installed on the 5 April working bee were obviously the longest and we had selected a heavier five mm diameter wire as compared with the four mm used on all the lower guys; this created a significant handling issue so we determined that it would be more efficient to cut and terminate all the guy wires on the ground and haul them up the tower in quick succession to be attached to the tower. The ground attachments would be made once all guy wires were attached to the tower. As the roll of wire was an unknown length there was a possibility that we did not have enough and so it was crucially important that the pre-cut guys didn't use much additional wire beyond what was actually needed. Norm Fox and I

had independently calculated the precise wire lengths of the proposed guy wires and despite a bit of doubt and a lot of pressure from Jim Nicol and Peter Hackett we stuck to our calculations and were proven correct to centimetre accuracy; well 30 cm accuracy. I believe that we still have two significant working bees to go, the next all important exercise will be the installation of the two metre co-linear antenna and some tower clean-up work. The final working bee will be the removal of the old guy wires, tower clean-up work and a lot of re-tensioning work. The next working bee is to be advised, although it is likely to be after ANZAC Day. If anyone is able to attend for future working bees, please advise us. For anyone thinking of attending I promise you that you are needed and you will enjoy.

Additional news from **WARG**, thanks to Anthony VK6AXB:

This AGM saw the retirement of three stalwart committee members Graeme VK6LV, Heath VK6TWO and Monique VK6FMON, who have worked hard for WARG the past few years. Their contribution was honoured by those present, with each being presented with a Certificate of Appreciation by WARG President Anthony VK6AXB.

Nominations for committee resulted in Anthony VK6AXB being returned as president and Peter VK6PM continuing as vice president. John VK6JAH continues as treasurer, also taking on the membership role. Ray VK6ZRW continues his good work as technical officer. Bob VK6ZGN and Cliff VK6LZ continue as committee members, and we welcome Barry VK6SP and Steve (SWL) joining committee for the first time. Ron VK6HRB continues in his role as shop manager, ably assisted by XYL Dot.

Anthony VK6AXB thanked all the volunteer site managers, members, supporters and others who had participated in WARG work and activities in the past year, and looked forward to continuing the work of maintaining and improving WARG's network in the year ahead. More information can be found at *www.warg.org.au*

Finally this month an update from **NCRG**:

Things are moving slowly of late with several major projects underway and a limited number of hands available to assist. Some members are off travelling the countryside, half their luck!

The 6/6/6 Yagis on 15 metres are progressing well with all antennas now at the club and the tower/rotator system completed ready for erection. The new club tower trailer will be completed by the time this is in print, and other projects are progressing well. A decision was made to ditch the 4 x 10 element two metre antennas procured for the VK6RIO beacon in favour of better optimised seven element beams from InnovAntennas in the UK. These antennas seem to be leading the race to give more 'bang for your buck' in VHF/UHF Yagi technology. Thanks to the owner Justin G0JSC, a deal was struck to optimise his designs for our beacon frequency and he also helped out with the cost of the antennas. Their webpage is at *www.innovantennas.com*

The club was visited by Steve KL7SB who was on holiday in WA and saw the chance to operate the CQ WPX CW contest from the club. He didn't have a lot of time spare but managed to work approximately nine hours for a total of 543 QSOs as VK6NC - well done Steve. We also have another overseas visitor in town as I write this, David N6AN, who was VK6OH for six months back in 1976! He's passing through and soon will be a competitor in the WRTC championship in the USA this year; our own Bernd VK6AA will be participating as a judge at this year's event, having been a competitor with Kevin VK6LW when it was in Russia a couple of years ago.

It's great to have overseas amateurs use the station when passing through WA, the invite goes out to Australian travellers as well!

Hamfest is looming on the horizon, on Sunday 3 August at the usual location, Cyril Jackson Recreation Centre in Fisher St., Ashfield. Doors open at 9 am to the masses and traders welcome from 7.30 am. There will be the usual hot food, drinks, raffles and, once again, entry has not increased in price, still $5 per person. Please book your tables as soon as possible as we always have hassles with the local shire providing adequate numbers at the hall. If we know well in advance we can chase them for more!

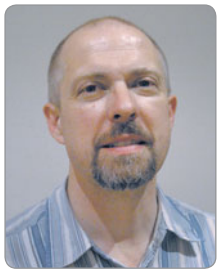
This year we also hope to have representation from the Western Australian Association of Men's Sheds, as the local Bassendean Men's Shed is progressing well towards its inaugural opening. I personally feel men's sheds have a lot to offer radio amateurs and likewise the other way around. Why not pay your local Men's Shed a visit and maybe promote AR to the guys there?

You can contact me for Hamfest bookings at present, more info will be on the club website *www.ncrg.info*

On 25th May a BBQ was held to farewell Heath VK6TWO/VK3TWO and Monique VK6FMON who will be relocating to VK3 after almost a decade in VK6. Being a part of multiple clubs and making many friends, it is time for them to say goodbye to VK6. They have very much enjoyed their time here and will miss all who have made them welcome here. What they will miss the most is not taking part in the WA versus the rest of Australia RD contest. There are some big boots to fill with getting those points, Hi Hi. Both Monique and Heath would like to thank all those who attended the BBQ, those who couldn't make it and all those who have sent them well wishes.

That's it for these two months, take care and see you next time.

73 Keith VK6RK.



VK7news

Justin Giles-Clark VK7TW
e *vk7tw@wia.org.au*
w *groups.yahoo.com/group/vk7regionalnews/*

Congratulations to Winston Nickols VK7EM on reaching his golden anniversary in amateur radio. Winston has been and continues to be a keen experimenter and home-brewer over those 50 years and on behalf of all amateurs and friends we wish him a happy 50th amateur birthday!

VK7 broadcast news

We have just finished another WIA broadcast year and it is a good opportunity to review the callback statistics for the WIA National News and VK7 Regional News broadcasts each Sunday. In VK7 we have over 20 people who compile, read and broadcast the VK7 Regional News on 14 different frequencies across VK7. There were a total of 4,272 callbacks, with repeater VK7RAD/RHT topping the list with 1166 callbacks and then VK7RAA with 842 callbacks, NW repeaters and other rebroadcasts accounted for 1163 callbacks and HF rebroadcasts accounted for 1101 callbacks. A huge thank you to all involved with these broadcasts.

The month of May also sees the Targa Tasmania Tarmac Rally with many amateurs participating and Gavin VK7HGO let me know who was involved in this year's event. VK7DY, VK7ZCR, VK7FMRS, VK7FNJS, VK7CL, VK7HGO, VK7TPE, VK7ZLM, VK7ZRO and VK7AN all participated and I apologise if I have missed anyone. This is a great practical demonstration of our hobby by providing communications support for this popular event.

Beacon and IRLP Node news

There is a new beacon in southern Tasmania at grid square QE37 with the callsign VK7RST. It is 25 watts and is CW modulated. It is co-located with the VK7RST six metre beacon on 50.297 MHz and the CW keying is common to the two beacons. The antennas are omni-directional and horizontally polarised. Reports welcome to the Radio and Electronics Association of Southern Tasmania Inc.

Flinders Island Amateur Radio Club

Thanks to Peter VK7PD for the following report. The AGM of the FIARC was held at the Interstate Hotel, Whitemark on Friday, 16 May and the attendees were VK7FKEK, VK7PD, VK4HFO, VK7AN, VK7JG and Robin Walker, with a further six apologies received. Elections saw Kerry VK7FKEK – President, Tim VK4HFO - Vice President and Robin Walker – Secretary. Al VK7AN gave a post-meeting talk on the history of FIARC including putting the island on the air for IOTA, OC-195 with club callsign VK7FLI. There is no membership fee so any radio amateurs living on, visiting or intend to visit the island are welcome to join. The next meeting is scheduled for October at the Whitemark old butter factory.

Northern Tasmania Amateur Radio Club

Congratulations Joe VK7JG on receiving a WIA President's Commendation at the recent WIA AGM for services in construction and maintenance of our remote repeaters and beacons in VK7. Congratulations also to Bernie VK7FBNK who successfully passed

Photo 1: The Flinders Island Amateur Radio Club AGM. L to R: Secretary Robin, Al VK7AN and President Kerry VK7FKEK. Photo courtesy of Peter VK7PD.

his Advanced licence - Bernie has applied for the call sign VK7NK.

The May NTARC meeting saw a presentation by Mark VK7FMWT on Tamar Sea Rescue Services. Mark took the audience through the 24 hour safety services that the TSRS provides including training, rescue, monitoring yacht movements and included a PFD safety demonstration. Thanks Mark.

Radio and Electronics Association of Southern Tasmania

We congratulate Geoff VK7FGGA who successfully upgraded to the Standard licence. We look forward to hearing Geoff on the air sporting his new callsign. The REAST committee welcomes aboard Scott VK7HVK to fill a vacancy.

REAST's May visit was a guided tour of the Mawson's Huts Replica Museum and thanks to Herman VK7HW who spent time at Casey Station in 1981 for the report. Hobart turned on a cold and drizzling day to put us in the mood for the tour. Our volunteer museum guides, Rod and Jean Leddingham have been part of the Antarctic Community for decades and have spent time at Cape Denison in Commonwealth Bay stabilising the original Mawson's huts. The replica spark transmitter and crystal receiver was of great interest.

It was great walking around the core of the hut with simulated ice floor and Katabatic wind sound effects. The internal of the hut was well set out and except for Mawson's small room, very accessible and displaying interesting artefacts that, coupled with the excellent information and answers from the volunteer museum guides, made it a worthwhile visit for everyone. Thanks to the Museum staff for a great tour.

Our DATV Experimenter's nights have seen a fantastic series of presentations by Rex VK7MO on 10 GHz non line of sight propagation modes. Rex spent a night on tropospheric ducting, tropo-scatter, rain scatter and aircraft scatter. While 10 GHz is generally thought of as suitable only for line of sight propagation Rex has been running tests from his home in Hobart with Rhett VK3GHZ in Bairnsdale Victoria over a 570 km non-line-of-sight path. This was a great series with each program starting with some theory of the mode and then evidence gathered to support (or question) the theory. Rex and Rhett have been using many different WSJT digital weak signal modes and Rex outlined the advantages and disadvantages of each mode. Thanks Rex and Rhett for a great series and the author looks forward to seeing the condensed talk at GippsTech this year.

Photo 2: Mawson's Huts Replica Museum. Photo courtesy of Justin VK7TW.

Silent Key

Peter Vince VK7PV

Peter gained his call sign around 1979. He was very active on the air from the Hobart suburb of Howrah up until 1994 when he started working for himself in a wood turning business. This expanded into retailing equipment for other wood turners. He also built and flew radio controlled model gliders, enjoyed trout fishing and camper vanning.

Unfortunately, looking forward to retirement and more time for hobbies, Peter was diagnosed with cancer in January 2013 and passed away on Friday, 23 May 2014. He will be greatly missed. Our condolences to Peter's family.

Contributed by Bill VK7WR.

WIA Traveller's Badge

New stocks of this very popular item have just arrived!

The badge can be ordered from the WIA office or via the WIA website at ***www.wia.org.au/members/bookshop/about/*** under the "Merchandise" heading.

The price is $10 plus postage and packaging.

Hamads

WANTED - NATIONAL

Seeking information about Amateurs who served

The official badge of the RAAF Wireless Reserve authorised in 1935.

Unfortunately our records of the various Wireless Reserves and amateurs who served during the two World Wars and other operations are sparse. In addition we have limited articles about amateurs' activities during their times of service.

Up until April next year, it is the Board's intention to raise the awareness of the involvement of amateur operators during these troubled times by: 1. Compilng lists of those who served and, 2. Publishing in AR and on our website, stories about the activities of amateurs both men and women who did serve.

Initially we wish to build up our database of those who did serve and, to this end, information about individuals is sought including: Name, Callsign, Service, Rank, where they served and any other brief information such as whether the person was a Prisoner of War or received a citation etc.

This is the minimum information sought. If you can elaborate with any stories about their activities, that would also be appreciated and may be published in article form.

If you wish to contribute, please forward material to the History and Archive Committee c/o the WIA Office or contact the WIA Historian, Peter Wolfenden VK3RV via email *vk3rv@wia.org.au*

Traders are wanted for the Shepparton & District Amateur Radio Club's Hamfest

Sunday 14 September

New and used Traders are welcome.
St Augustines Hall, Orr Street Shepparton

For table bookings, phone **John VK3PXJ** on **03 5824 1188**

WANTED – VIC

Fitting for antenna – 5/16th to PL-259 or 5/16th to SO-239.

Contact Sam VK3BNJ on 03 9743 6708.

I am restoring an FT7 and am in need of the printed circuit board for the AF unit. The board number is PCB No 1648. I would appreciate hearing from anyone who is willing to part with one for a negotiable price.

Contact Laurie VK3BV on email *shirlau@netbay.com.au* or phone 03 5975 0306.

FOR SALE – VIC

A Tet-Emtron three element 14, 21, 28 MHz beam antenna. Price is negotiable. This is a big antenna, so local pickup only.

Contact Fred VK3JM, QTHR, phone 03 9801 4972 or *vk3jm@bigpond.com*

FOR SALE – SA

The VK5JST Aerial Analyser (*AR* May 2006). Over 10,000 built, and still available from the Adelaide Hills Amateur Radio Society. For full details see *www.ahars.com.au*

WANTED – QLD

A cheap rig to get on 10 metres SSB. Preferable coverage from 28 MHz beacons up to 29 MHz. Contact Gareth VK4AGD at *vk4agd@wia.org.au*

FOR SALE – WA

A 16 metre Hills lattice guyed mast (rotating within guy wire attachments) including all guy wires, fittings, coax cables, mast rotating drive and controls.

Plus a 10 metre four element monobander beam with gamma match, and a 15 metre two element monobander beam with gamma match. All in very good condition. $600 the lot.

Buyer would have to dismantle.

Contact Milan VK6ZH on 08 9293 4107 or email *milan.udall@gmail.com*

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AR is a forum for WIA members' amateur radio experiments, experiences, opinions and news.

Your contribution and feedback is welcomed.

Guidelines for contributors can be found in the AR section of the WIA website, at *http://www.wia.org.au/members/armag/contributing/*

Email the Editor:
editor@wia.org.au

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- Submit by **email (MUCH PREFERRED)** or if written and mailed please print carefully and clearly, use upper AND lower case.
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- QTHR means the address is correct in the current WIA Call Book.
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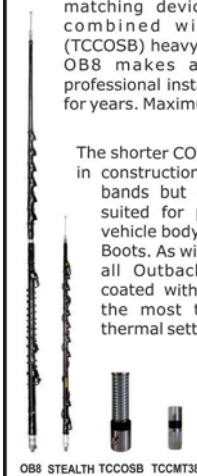

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WIA Functional Committees

The WIA is a membership organisation with a very wide range of complex functions and member services. Core functions and services are administrative in nature (general administrative functions, membership services, examination and callsign management, financial etc…) and are performed by salaried staff.

Volunteers perform a diverse range of highly specialist functions (ACMA liaison, Frequency Co-ordination, Standards liaison, Interference issues, technical support and training and assessment etc.). These volunteers provide the majority of member services, however they have been loosely organised and often overstretched.

The new committee system attempts to structure the WIA's non-core activities into 10 broad functional areas, each comprising a team of volunteers under the direction of the WIA Board. This structure is intended to spread the workload on our volunteers, improve communications between members and the WIA Board, improve services to members, and encourage more people to become involved in the WIA.

WIA Committee Charters

Spectrum Committee

(Regulatory, ACMA, ITU, IARU, Repeaters & Beacons, Standards, Interference & EME, Monitoring Service)
Geoff VK3AFA, Phil VK2ASD (Director), Peter VK3MV, Roger VK2ZRH (Director), Brian VK3MI, Dale VK1DSH, Peter VK3APO, Richard VK2AAH, Gilbert VK1GH, Rob VK1KRM, Noel VK3NH, Doug VK3UM

- Perform all ITU and IARU liaison activities.
- Liaise with, and act as the 1st point of contact for, the ACMA.
- Advise the Board, and enact Board policy in relation to all radio communications regulatory issues and the LCD.
- Represent the WIA to State and Local Government
- Represent the WIA to Standards Australia
- Provide specialist technical advice and coordinate repeater and beacon licence applications and frequency allocation.
- Develop responses to significant and prolonged harmful interference issues affecting amateur radio operations.
- Provide an information resource for EMC/EMR issues.
- Administer the IARU Monitoring Service in Australia
- Provide a technical resource to other committees and the WIA Office.

Technical Advisory sub-Committee (Tech support, Band plans etc.)

John VK3KM, Doug VK3UM, Rex VK7MO, Paul VK5BX, Walter VK6KZ, Barry VK2AAB, Bill VK4XZ, Peter VK3PF, Paul VK2TXT, Peter VK1NPW, John VK1ET, Peter VK3BFG, Eddie VK6ZSE, Peter VK3APO

Administrative Committee

John VK3PZ (Treasurer), Greg VK2GRJ (Assistant Treasurer), David VK3RU (Secretary), Mal VK3FDSL (Office Manager), Phil VK2ASD (President), Chris VK5CP (Vice President)

- Responsible for the efficient and correct operation of the WIA office.
- Responsible for staffing and workplace safety.
- Provide a specialist administrative resource to the WIA office as required.
- Manage contractual agreements.
- Manage business relationships.
- Ensure compliance with the ACMA Business Rules
- Prepare yearly budgets
- Prepare quarterly financial reports for the Board
- Prepare independently reviewed YE financial reports and balance sheets for circulation to the membership prior to each Annual General Meeting.
- Manage insurances and to be responsible for currency of insurance policies.
- Maintain a complaints register.
- Ensure complaints are handled in accordance with WIA policy and any contractual agreements.

Affiliated Clubs Committee

Ted VK2ARA, Mal VK3FDSL (Office Manager), John VK3PZ (Treasurer), Phil VK2ASD (Director)

Communications, Marketing, Publications and AGM Committee

Robert VK3DN (Director), Phil VK2ASD (Director), Jim VK3PC, Graham VK3BB (Broadcast), Roger VK2ZRH (Director) Publications sub-Committee (AR Magazine, Callbook etc): Peter VK3PF (Editor AR), Peter VK3PH (Editor Callbook), John VK3PZ (Treasurer), Ernie VK3FM, Peter VK3AZL, Evan VK3ANI, Ewan VK3OW, Bill VK3BR

- Communication with members and the public:
- Communicate with the membership.
- Publicise WIA activities and initiatives.
- Develop strategies and resources for the promotion of Amateur radio to the public.
- Develop strategies and resources for the promotion of WIA membership to the Amateur community.
- Supervise and/or perform promotional activities.
- Co-ordinate the yearly AGM activities

Education Committee

Fred VK3DAC (Director), Owen VK2AEJ, Ron VK2DQ, Mal VK3FDSL (Office Manager)

- In association with the WIA's RTO and affiliated clubs offering training services, develop and administer the WIA's training and assessment systems.
- In association with the Spectrum Strategy Committee, develop and maintain the various licence syllabi and associated question banks.
- In association with the Community Support Committee and the RTO, develop and maintain the Emergency Communications Operator scheme.
- Ensure the confidentiality and security of all personal information, question banks and examination papers.

Radio Activities Committee

Chris VK5CP (Director), Geoff VK3TL

Contests sub-Committee

Alan VK4SN, Denis VK4AE/3ZUX, John VK3KM, Tony VK3TZ, Kevin VK4UH, Colin VK5DK, James Fleming VK4TJF

Awards sub-Committee

Bob VK3SX, Marc VK3OHM, Laurie VK7ZE, Alan VK2CA, Alek VK6APK, David VK3EW, Paul VK5PAS, ARDF sub-Committee: Jack VK3WWW, ARISS sub-Committee: Tony VK5ZA

- All activities associated with actual radio operation, such as: contests, awards, distance records, QSL services, ARISS, AMSAT, ARDF etc.

QSL Card sub-Committee

Geoff VK3TL, Alex VK2ZM, John VK1CJ, Max VK3WT, Ray VK4NH, Stephan VK5RZ, Steve VK6IR, John VK7RT, Craig VK8AS

Historical and Archive Committee

Peter VK3RV, WIA Historian, (Leader), Drew VK3XU, Linda VK7QP, Martin VK7GN, Ian VK3IFM, Will VK6UU, David VK3ADW, Jennifer VK3WQ/VK5ANW, Roger VK2ZRH (Director)

- Develop, maintain and preserve the WIA's historical and archive collection
- Encourage access to the collection by WIA members and those seeking historical material for publication.

IT Services

Robert VK3DU (Director), Tim VK3KTB

- Provide an IT resource to other committees and the WIA Board.
- Be responsible for the off-site data back-up of all IT systems information.
- To update and maintain the WIA website as required.
- Advise the Administrative / Financial committee in relation to the MEMNET Cloud Service contract.

Community Service Committee

Fred VK3DAC (Director), Greg VK2GRJ (Assistant Treasurer), Ewan VK4ERM (Director), Paul VK5PH

- Develop, promote and co-ordinate all WIA community support activities

New Initiatives

Phil VK2ASD (Director), Robert VK3DN (Director), Roger VK2ZRH (Director), David VK3RU (Company Secretary)

- Think-tank ideas and initiatives to advance amateur radio and WIA membership.
- On approval by the Board, run proof of concept trials.

Club Grants sub-Committee

Reg VK7KK, Peter VK3KCD, Bill VK4ZD

- Manage all arrangements between the WIA and WIA Affiliated Clubs
- In cooperation with the Administrative / Financial committee, manage the Club Insurance Scheme
- Encourage stronger relationships and communications flow between the WIA and WIA Affiliated Clubs
- Encourage increasing WIA membership ratios in Affiliated Clubs
- Manage the Club Grants Scheme
- Identify and bring regional Affiliated Club issues to the attention of the WIA Board.

WIA Annual Conference Sunshine Coast 16 - 18 May 2014

WIA President Phil Wait VK2ASD presenting Richard Philp VK4RY with a plaque in recognition of the planning and organisation of the WIA 2014 AGM weekend by the Sunshine Coast Amateur Radio Club.

Past WIA Director Bob Bristow VK6POP presenting at the Open Forum meeting.

The ALARA ladies attending the AGM weekend.

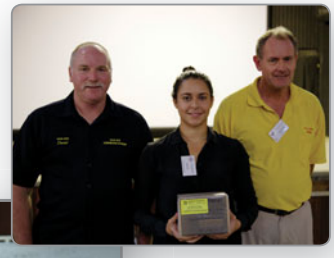
WIA President Phil Wait VK2ASD and WIA Treasurer John Longayroux VK3PZ inspecting the RACQ Careflight helicopter.

Stuart Gudgeon from Australia Zoo Croc Research - AGM Dinner Guest speaker.

Friday evening dinner at the Alexandra Heads Surf Club.

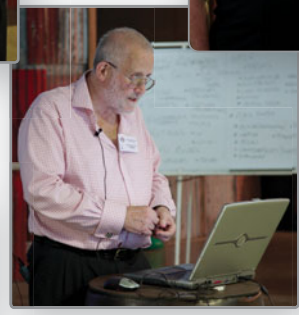
The lucky raffle prize winners.

WIA President Phil Wait VK2ASD presenting Richard Cerveny VK2AAH with his WIA President's special commendation.



John Hinde VK4JWH receiving his door prize: a Boafeng dual band handheld donated by David VK4ICE.

Richard Philp VK4RY, Fund Raising for Clubs.



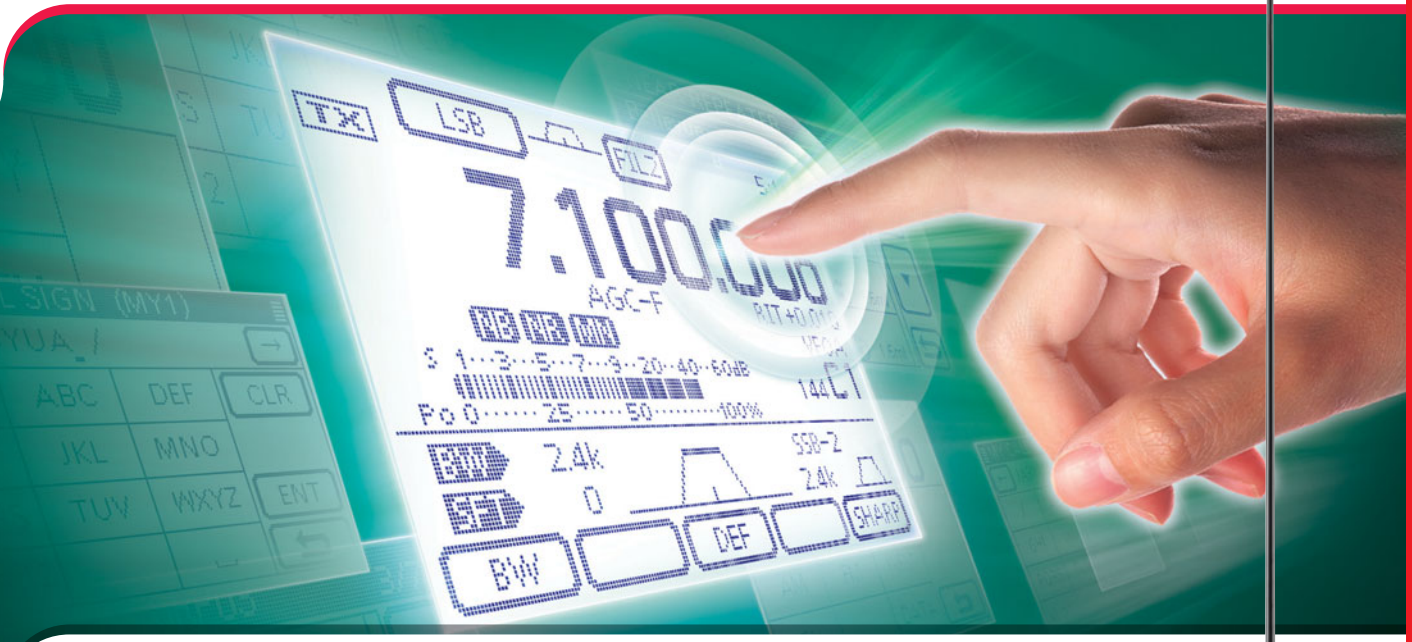
Roger Harrison VK2ZRH, EMR Obligations.

Peter Schrader VK4EA, EmCom interfacing WICEN to the real world.

Scott Watson VK4CZ, Promoting your club.

Photos by WIA Director Robert Broomhead VK3DN.

ICOM



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